

Desert

FEBRUARY, 1958 . . . 35 Cents





The colorful Arabian Nights Pageant is a nightly feature of the Date Festival.

Indio Date Festival to be February 14-23

The Riverside County Fair and National Date Festival takes place February 14-23 at Indio, California, where most of America's commercial dates are produced. Linking the new world deserts with the old, highlight of the Festival is the nightly outdoor Arabian Nights Pageant featuring a colorfully costumed cast of 150. A new drama, "The Tale of the Jovial Geni," written by former *Desert Magazine* associate editor Margaret Gerke, will be presented this year.

A new Fair event will be the Outdoorsman Show with exhibits featuring all the recreational pursuits from water skiing to desert mountain hiking

offered in the county. The show will include trailer, boating and conservation exhibits.

Here are some other Festival events:

National Horse Show, daily through Feb. 21.

Camel Races. Originated at the Indio show many years ago, this daily event provides many hilarious thrills for viewers.

Cirque Araby, another new feature this year. Only two performances—matinees on Feb. 22 and 23 — are scheduled.

Costumed Street Parade at 10:30 a.m. Feb. 22 from downtown Indio to Fairgrounds.

In addition to commercial, agricultural, civic and educational exhibits, the Festival again has scheduled one of the Southwest's most extensive gem and mineral shows. Hobbyists from throughout the West have reserved display space for rare and beautiful mineral specimens and polished stones.

Free entertainment is presented daily on the Arabian Stage at 3 and 5 p.m. The Arabian Nights Pageants, for which there is no extra charge, start at 6:45 p.m.

Fairground gates are open daily from 9:30 a.m. to 10 p.m. Admission to the grounds is 85 cents for adults, 25c for children 6 to 12, and free to children under six.

DESERT CALENDAR

Jan. 30-Feb. 2—Open Golf Tournaments at Phoenix and Tucson.
 Jan. 31-Feb. 2 — Parada del Sol, Scottsdale, Arizona.
 Feb. 1 — Far West Ski Association Giant Slalom Races, Flagstaff.
 Feb. 1-2—18th Annual Rodeo, Palm Springs, California.
 Feb. 1-2—Western Saddle Club Pony Express Ride from Prescott to Phoenix.
 Feb. 1-2—Dons Club Tour of Chiricahua National Monument and Southern Arizona, from Phoenix.
 Feb. 2—Candelmas Day Ceremonial Dances at San Felipe, Cochiti and Santo Domingo pueblos, N. M.
 Feb. 3-9 — Southwestern Livestock Show and Rodeo, El Paso, Texas.
 Feb. 4—State Pancake Race, Clayton, New Mexico.
 Feb. 7-9—18th Annual Imperial Valley Tomato Festival, Niland, Calif.
 Feb. 8—Festival of Fashion, Tucson.
 Feb. 8-9—Jaycee Silver Spur Rodeo, Yuma, Arizona.
 Feb. 8-9—Western Saddle Club Stampede, Phoenix.
 Feb. 9—Buffalo Barbecue, Chandler, Arizona.
 Feb. 9 — Dons Club Apache Trail Tour, from Phoenix.
 Feb. 9-11—New Mexico Wool Growers Association Convention, Albuquerque.
 Feb. 9 and 23—Desert Sun Ranchers Rodeo, Wickenburg, Arizona.
 Feb. 12-13 — Tri-State Hereford Breeders Show, Clayton, N. M.
 Feb. 13-16 — 11th Annual Carrot Carnival, Holtville, California.
 Feb. 14-15—Dons Club Bus Tour of Death Valley National Monument, from Phoenix.
 Feb. 14-16—Gold Rush Days, Wickenburg, Arizona.
 Feb. 14-23 — Riverside County Fair and National Date Festival, Indio, California. (See facing page.)
 Feb. 15 — Ceremonial Dances, San Juan Pueblo, New Mexico.
 Feb. 15-16—Mid-Winter Ski Carnival, Taos, New Mexico.
 Feb. 16-23 — Arizona Sports, Vacation, Boat and Trailer Show, Phoenix.
 Feb. 20—Dried Arrangements Flower Show, Garfield Garden Club, Phoenix.
 Feb. 20-23—33rd Annual Fiesta de los Vaqueros Parade (on 20th) and Rodeo, Tucson.
 Feb. 22-23 — Arabian Horse Show, Scottsdale, Arizona.
 Feb. 22-23—Arizona Cup Ski Races, Flagstaff.
 Feb. 23—Dons Club Tour of Jerome and Montezuma National Monument, from Phoenix.
 Feb. 23-March 1—11th Annual Cactus Show, Desert Botanical Gardens, Phoenix.
 Feb. 28-March 1 — 11th Annual Square Dance Jamboree, Phoenix.
 Month of February—Oriental Paintings Art Exhibit at Phoenix Art Center.
 Month of February—Fred D. Penney Exhibit at Desert Magazine Art Gallery, Palm Desert, California.



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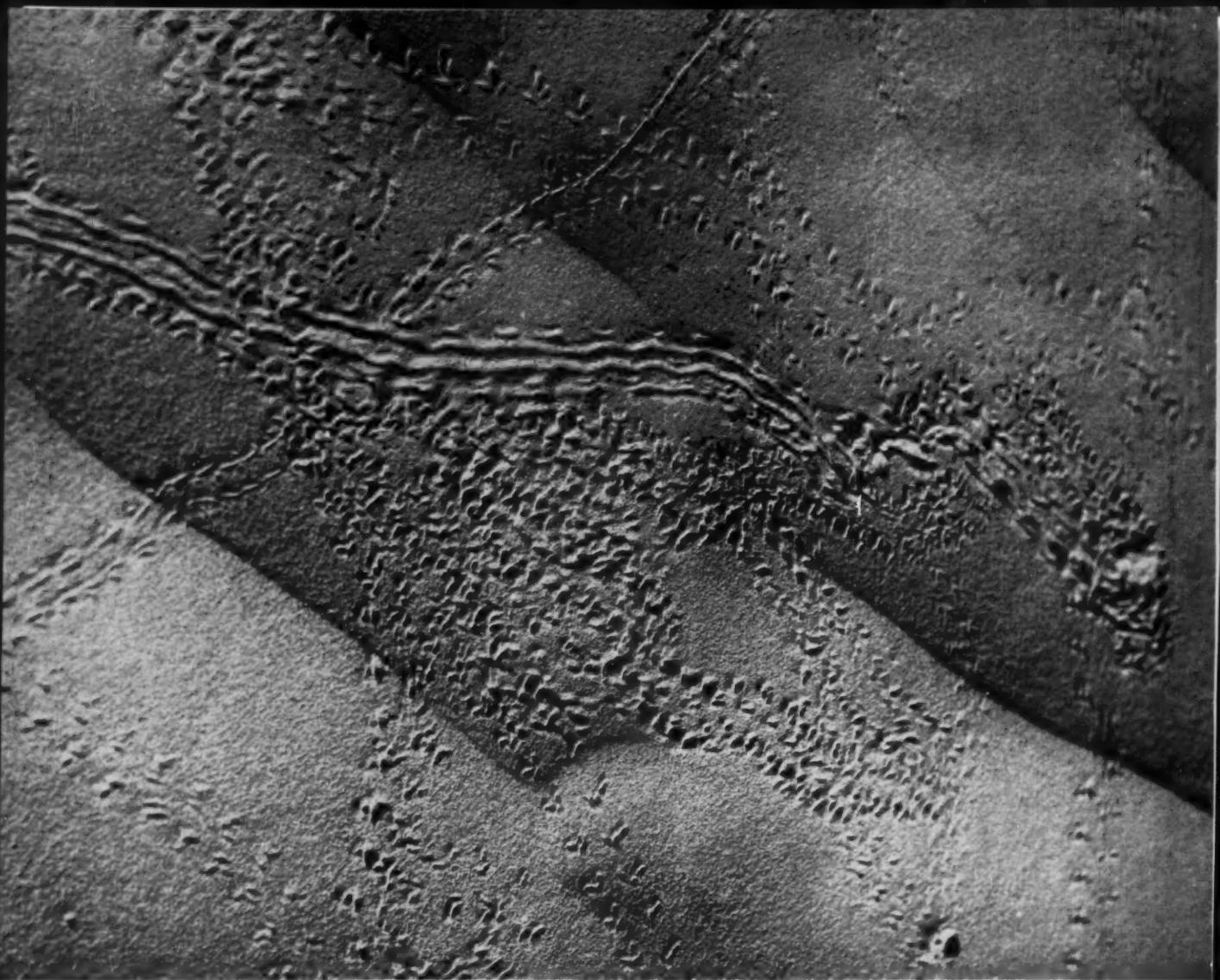
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Photograph by Richard L. Cassell

RATTLESNAKE

By GRACE BARKER WILSON
Kirtland, New Mexico

A sinuous motion stirs under sagebrush,
With faintest of sound in the desert's wide
hush;
Then diamond back markers in perfect design
Glide out of the shadow into bright sunshine.
With flattened head lifted, and swift darting
tongue,
It goes seeking breakfast of prairie dog
young.
And then comes the warning that freezes
the breath.
The rattle that all desert things know spells
death.

• • •

NIGHT IN THE INDIAN COUNTRY

By JEAN HOGAN DUDLEY
Inglewood, California

We camped in Hopi Country by a cold
Thin river, where red sandstone cliffs
stretched high.
The moon rose like a red fire, then a gold.
One cliff-face turned to silver in the sky.
The other lay in swaths of shadow, dark
As in a mine-pit . . . Stranger than a dream
This jagged land—as if upon some stark
Moon-plain, itself, we lay, in earth-light
gleam.

The Desert Speaks

By ANYA P. SALA
Tombstone, Arizona

Those little trails that crisscross
Sand smooth as driven snow
Reveal the quiet traffic
Of desert folk who go
Wandering, adventuring,
And seeking, to and fro.

Here, birds have sought bright berries
That hang above the ground
On brittle branches, drying—
While there, by leap and bound,
A squirrel has crossed the hollow
To climb the farther mound.

Gray fox and little rabbit—
The tracks are very clear.
And look! The dainty footprints
Of a family of deer,
Unhurried in their movements
Because no panther's near.

How much the silent trails reveal
Of desert folk who go
Adventuring, and scurrying,
And seeking, to and fro—
A wondrous tale of wandering
On sand like driven snow.

DESERT SUNSET

By FRANCES PARKER GRAAF
Alhambra, California

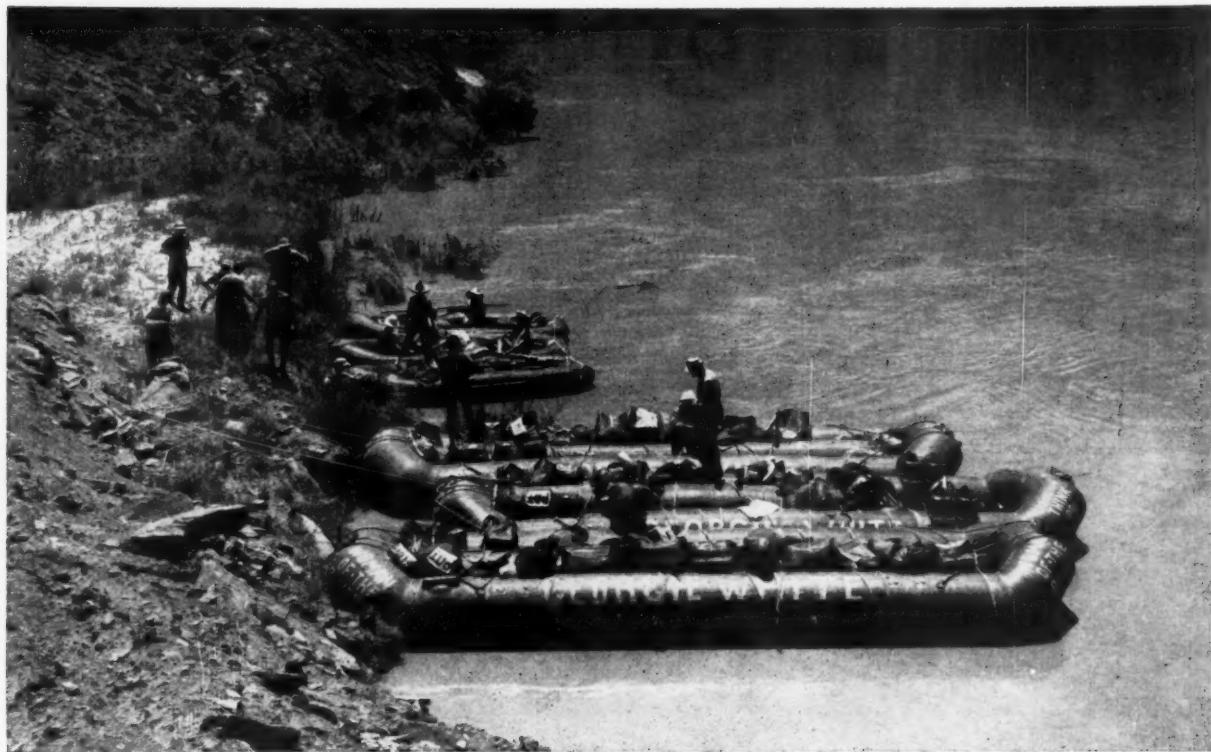
Mountains darkly silhouetted
Against a flaming sky—
The glory of a desert sunset
We watched together, you and I.
Our steps were slow in leaving,
So lovely was the sight.
As silently we watched it fade
And beckon to the night.

Pigmy

By TANYA SOUTH

How greatly does the pigmy, Man,
Think of himself in this, God's plan!
He puffs up high his little chest
In egotism, to attest
His greatness. His bombastic speech
The farthest earthly echoes reach.
It is astounding and despairing,
However slow the Path he's faring,
How great he feels himself, how fine
In God's design!

And yet the Earth itself, the sphere
On which he, as a microbe, dwells,
Is in itself a microbe sheer
In interplanetary cells.



These are the two neoprene barges on which Georgie White piloted the 23 boatmen and passengers on her 1957 expedition through Cataract Canyon.

The Water Was Rough in Cataract Canyon . . .

All Colorado River boatmen have a wholesome respect for Cataract Canyon where the stream drops 415 feet in 41 miles—and you will understand the reason for Cataract's bad reputation when you read this story of a trip through the rapids in rubber rafts during the high flood season of 1957. Here is a day by day record of what one of Georgie White's river expeditions encountered in this treacherous sector of the Colorado.

By RANDALL HENDERSON
Map by Norton Allen

THE RAPIDS in Cataract Canyon of the Colorado River are no rougher than many of those in Grand Canyon, farther downstream, but there are more of them to the mile. Frederick S. Dellenbaugh, who accompanied the second Powell expedition in 1871, recorded 62 rapids in 41 miles, and some of them are thrillers.

Thanks to the invitation of Georgie White, famed woman pilot of the western rivers, I spent three wet days riding over and through the tumultuous

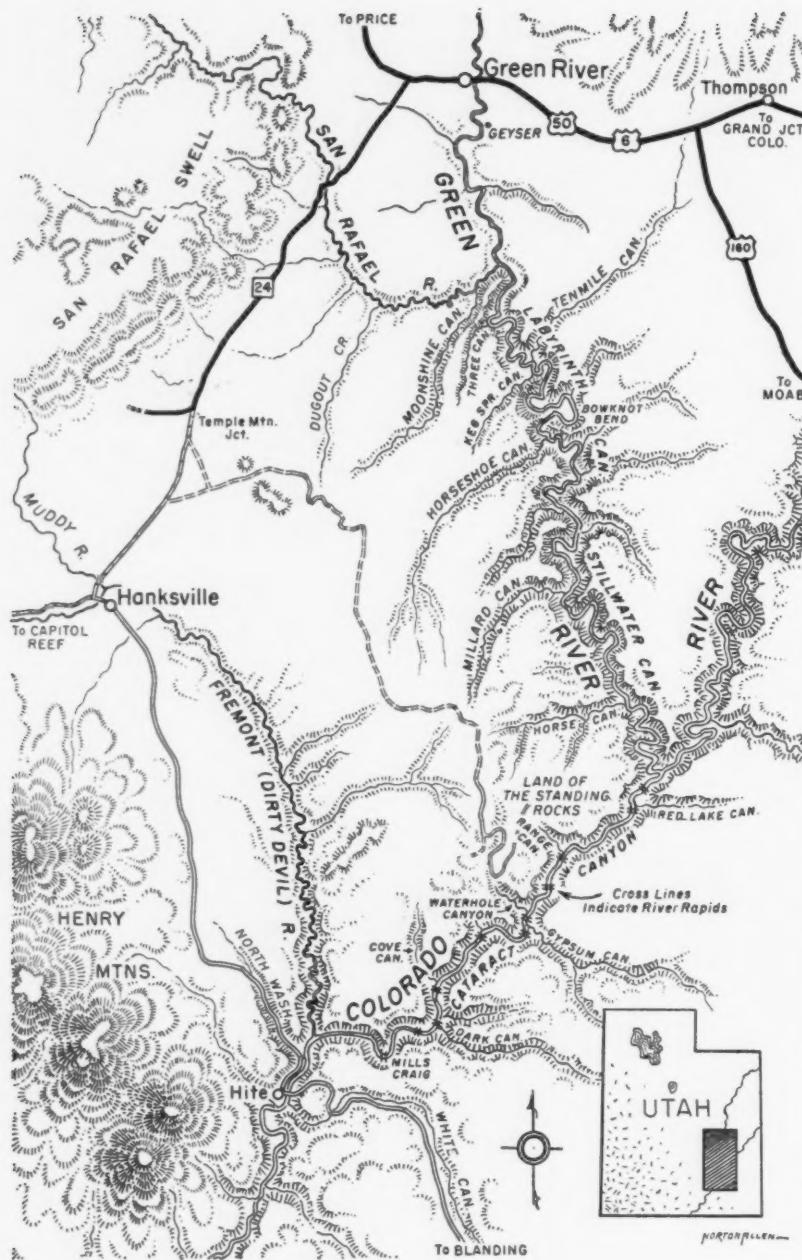
waters of Cataract last June. Most of the time we were on top of the waves, but not always. There were occasions when my experience was much like the sensation of diving through the high breakers at the beach. I soon learned that the best technique for riding that kind of water was to duck my head and hang onto the ropes which were strung around the perimeter of the rubber rafts on which we were riding.

Our voyage started at Greenriver,

Utah—not to be confused with the town of Greenriver farther north along the river in Wyoming.

Throughout the day, June 9, prospective voyagers who had signed for the trip were arriving at Robbers' Roost Motel, our rendezvous in Greenriver. A majority of the 21 passengers who with Skipper Georgie White and two boatmen made up the party, were from California, but the list also included midwesterners from Chicago, Milwaukee, St. Louis and Cicero, Illinois.

The evening preceding our departure was spent in getting acquainted with the passengers who were to be our companions on the trip, and in repacking clothing, bedrolls and equipment. Everything must be enclosed in waterproofing, and for this purpose Georgie had provided a quantity of neoprene rubber packing cases — war surplus items. There were big containers for



clothing and bedding, and small ones for camera equipment and personal items. In addition to the neoprene cases, a kapok life jacket and plastic cup and bowl were issued to each of us. The latter items were to be our eating vessels for the next six days.

Early next morning we got our first glimpse of the river craft which were to carry us through Labyrinth and Stillwater Canyons of the Green, and Catract Canyon of the Colorado, to our destination at Hite Ferry crossing. The boats were moored along the river bank just below Greenriver.

Georgie White has her own system for operating the rubber rafts she uses for river transportation. For this trip she provided two neoprene barges, one composed of three 13-ton towing rafts lashed together with nylon rope, making a deck approximately 21x28 feet, and the other composed of three 10-man neoprene landing rafts each 15 feet long with a seven and one-half-foot beam, also tied together side by side with nylon.

The 13-ton rafts are similar to the rubber pontoons used by army engineers during the last war for bridge

work, except that our rafts have a longitudinal tube down the center. The outer tube has eight air cells and the center tube two.

Luggage is tied to the ropes on top of the barge, and in quiet water the passengers may move over the deck at will.

Since the large barge is too unwieldy for oars to be effective, its center raft is equipped with an 18 horsepower Johnson outboard motor to facilitate landing and maneuvering in the current. Georgie was motorman and pilot throughout the trip. The smaller barge has an oarsman on each of the outside tubes.

The skipper's instructions were simple: "Tie your luggage on securely," she said, "and wear your life jackets." Actually there was little need for life jackets in the smooth-flowing current of the Green River, but evidently Georgie wanted us to become accustomed to wearing them, for the day when they might be needed.

At 10 a.m. we shoved off in a drizzling rain. A mile downstream we passed under the cable of the USGS gauging station, and the hydrographer in his cab overhead told us the river was flowing 38,000 second feet of water. This is a big discharge for the Green River, and the abundant driftwood floating with the current indicated the stream was still rising.

I started the trip in the big barge. With the help of the motor we were making 10 miles an hour. We were in the Morrison formation with low cliffs and hills on both sides and a belt of willow, tamarisk and mesquite along the shore lines.

Seven miles downstream Georgie pulled to the shore just in time for us to witness a fountain of water spouting from the limestone mesa, an intermittent geyser which came into action several years ago when drillers put down a well here, and then abandoned it because of the highly mineralized hot water they tapped. The geyser gave warning of its impending discharge by sputtering for a few seconds, and then sent a fountain of water 30 feet into the air. Three minutes later it had subsided.

As we continued downstream hundreds of cliff swallows darted around us. They feed on the wing, diving down to the surface of the water for a morsel of food and then zooming away, apparently undisturbed by the big rubber barges floating with the current. In places we could see their mud nests on the almost vertical cliff walls.

We pulled ashore for lunch where there was a little grove of cottonwoods, and saw where beaver had been cutting down some of the smaller trees.

Later on the trip we saw an occasional beaver swimming close to the shore.

Georgie White has reduced her commissary operation on these trips to utter simplicity. She carries one of those six-feet-in-diameter octagonal plastic wading pools. Preparing lunch consists of inflating the tubular rim of the pool, placing it on the ground, and then filling the basin with an appetizing assortment of cold meats, cheese, jam, honey, fruit and fruit juice, and canned nut bread. We had buffet lunch—or as one member of the party termed it, "Cataract Canyon smorgasbord."

For evening meals and breakfasts, there were three two-burner Coleman stoves and a generous supply of Revere kettles—one stove for hot water to make instant coffee or chocolate, one for a hot canned meat and a vegetable, and one with kettles for washing and rinsing those plastic cups and bowls. We found it no hardship to eat an entire meal from soup to dessert in a bowl, with a plastic cup and teaspoon—and then wash them ourselves in readiness for the next meal. Hot cakes or beef stew taste just as good in a porridge bowl as on a fine dinner plate, when one is camping out.

It requires careful advance planning to feed 24 people in this manner. Much of the food, such as breakfast cereals and canned fruits, were in individual containers. Preparing for a river trip, Georgie and her shore crew pack a complete day's ration for 10 people in one neoprene case, with the breakfast items on top. Then the cases are numbered in bold letters, and when mealtime comes the boatmen simply offload the right cases and the stoves and the meal is served with a minimum of effort.

During the afternoon we passed from Morrison to the Entrada formation, and camped that evening just below the mouth of San Rafael River on an embankment of red sand. There had been generous rains earlier in the season and the sandy floor of our campsite was covered with a profusion of lupine, fiddleneck, phacelia, salmon mallow and what appeared to be a species of white sand verbena. The most conspicuous shrub on the hillside was squaw bush.

The river rose three inches during the night and was carrying great floats of drift when we embarked at 7:15 in the morning. The canyon walls began to close in, and later in the morning the Entrada formation gave way to Navajo sandstone. Here the creamy walls along the stream revealed lovely tapestries — patterns formed by the minerals carried down the sidewalls by rainwater. Generally these stains are caused by manganese in solution—



Georgie White, three times through Grand Canyon in 1957.

and are not true desert varnish. Far up on one hillside we saw a crew of men working a uranium mine.

Since leaving San Rafael River we had been in a sector of Green River which Powell named Labyrinth Canyon. Stillwater Canyon is a continuation of Labyrinth with no well defined dividing line. Viewed from the river Labyrinth and Stillwater Canyons present an ever changing panorama of beauty and majesty — equal in my

opinion to the beauty of Glen Canyon in the Colorado which later will be submerged in the reservoir behind Glen Canyon dam.

We passed Three Canyons, tributaries which come together and merge into the Green River gorge. We made the great sweep around Bowknot Bend where the river almost doubles back on itself. We passed the mouth of the great Horseshoe gorge where earlier in the year I had photographed



Georgie White, fast water skipper.
Photo by Cliff Seferblom.

some of the most amazing pictographs in the Southwest (*Desert Magazine*, Oct. '57). This is a land of multi-colored sandstone, of turrets and domes and spires sculptured by millions of years of erosion. One feels very humble in such a setting.

We camped that night near one of the newly discovered uranium mines, where a caretaker was temporarily in charge.

In landing the big barge we got a puncture. This neoprene rubber is almost impervious to the battering it gets on rocks—but it could not withstand the dagger-like point of a huge dead cottonwood root which protruded from the bank. Georgie, piloting the raft from the stern, did not see the root, and we hit it at five or six miles an hour. There was a phuff—and the cell went flat.

It was only a minor accident. The boatmen patched it up that evening, but lacking equipment for a vulcanizing job that must be done from the outside, the cell finished the run through the canyons a bit flabby, but it affected our journey not at all. There were still nine air-tight cells in the raft—29 in the barge.

There had been rain back in the hills, and we passed two chocolate-colored waterfalls pouring over the cliffs along the river on this second day of our voyage.

We were away at 8:15 the third morning—in a new type of geology. We had passed out of the Navajo sand-

stone, and the cliffs during much of the morning revealed other sedimentary deposits so common in Southern Utah. At the top was Wingate, often almost white. Below was a stratum of Chinle, the formation which yields so much fossil material to the paleontologists, then Shinarump and below that Moenchi. Uranium prospectors have learned that uranium ores often are found at the contact between Chinle and Shinarump sandstones, and we saw the "coyote holes" of miners in many places.

The old-timers in this region have their own vocabulary for place names. Every cove along the river spacious enough for grazing or farming is a "bottom." During the trip we passed Horsethief Bottom, Tidwell Bottom, Potato Bottom, Beaver Bottom, Queen Anne Bottom and Anderson Bottom. Toward noon we entered a new formation—Cutler sandstone.

For lunch we pulled ashore to the shade of a huge block of stone which had fallen from the cliff above. On the back side of the rock I discovered some Indian petroglyphs, and the ground along the base of the nearby cliff was strewn with the discarded chert chips of prehistoric arrowmakers.

The river continued smooth all day and our camp that night was on a wide sandy ledge just above the river. I spread my bedroll in a lovely natural garden of salmon Mallow in full blossom — careful not to disturb these colorful wildlings of the Utah desert.

In my log of this day's trip I again find the notation, "Stillwater is a lovely canyon—no less so than Glen Canyon of the Colorado."

That evening at our campfire gathering, the women staged a little ritual in which Bill Slamp, our companion from Chicago, was presented with some improvised bits of attire in celebration of his birthday. The delightful companionship of such a trip — among people who until three days ago were strangers—is a refreshing experience. Somehow, close association in such an environment brings out the best in humans.

The Green River at this point flows through the Robbers' Roost country, one of the hideaways for Butch Cassidy and his outlaws. The story is recorded in much detail in Charles Kelly's *Outlaw Trails*, now out of print.

We shoved off at 7:40 the next morning, and at 10:40 reached the confluence of the Green and Colorado Rivers. The Colorado above this point is shown on old maps as the Grand River. They come together in the heart of an almost inaccessible jumble of cliffs and buttes. Eight years ago I came overland to this junction with

a party guided by Ross Musselman of Moab. A quarter of a mile away it became too rough for our horses, and we finished the trip on foot.

At 11:30 we stopped for lunch at a cove known as Spanish Bottom, where an old Spanish trail comes down from the Land of the Standing Rocks to a place that could be forded in low water.

Soon after we departed from Spanish Bottom we could hear the roar of water. We were in Cataract Canyon, with the river in flood discharge, and we knew there was rough boating ahead.

I had exchanged seats with one of the passengers on the small barge. We were down close to the water and for the next two days I spent much of my time either hanging onto the ropes or bailing.

Then we came to the first of the rapids. Beneath the surface, and completely submerged at this stage of the river, were great boulders over which the water poured in mad whirlpools. The oarsmen strove to miss these holes, and generally were successful, but there was no way of avoiding the series of huge lateral waves which curled up in quick succession below. Sometimes the lead raft would be wallowing at the bottom of the pit between the breakers as the rear raft came over the top of the last one. And immediately their positions were reversed. It was a violent roller-coaster — and a very wet one. Inevitably, some of the waves broke over the rafts and the ropes creaked and groaned as the tremendous power of the water tried to jerk the rafts apart.

It was rough going, but we had

PERSONNEL

Cataract Canyon Expedition,
June 10-16, 1957

Georgie White, Los Angeles, pilot-leader.
Fred B. Eiseman, St. Louis, boatman.
Harold Smithson, accompanied by his wife Carma, boatman.
A. Gregory Bader, Los Angeles.
Wm. B. Barnhill, Roswell, N. M.
A. B. Cadman, Jr., Alhambra, Calif.
Nathan C. Clark, Los Angeles.
Tallulah Le Conte Elston, Carmel, Calif.
Randall Henderson, *Desert Magazine*.
G. D. Hitchcock, Pasadena, Calif.
Marion R. Jones, San Francisco.
Ed. J. Karveolet, Long Beach, Calif.
John T. Lonk, Cicero, Ill.
L. C. B. McCulloch, San Francisco.
Carl R. Peterson, Los Angeles.
Frank Rich, Jr., Culver City, Calif.
Tora M. Ringdahl, San Francisco.
Joel Sayre, Santa Monica, Calif.
Bill Slamp, Chicago.
Richard and Marion Smith, West Covina, Calif.
Walter Szedziewski, Milwaukee.
Dorothy Wullich, San Diego.

complete confidence in our boats, and as we emerged from each dousing the passengers would cheer their triumph over Ol' Man River.

Once a wave caught Marion Jones, who was riding in the lead craft, and washed her overboard. But she hung onto the ropes and Boatman Fred Eiseman dropped his oars and pulled her back to safety. She shook the water out of her hair, resumed her seat in the boat, and grinned. Of course we were all wearing our kapok jackets, and had no feeling of personal hazard.

The big barge with its 18 horsepower to help it along, was always ahead of our smaller barge. In mid-morning we caught up with the leaders as they were trying to figure some way to salvage a neat little fibre-glass skiff they found tied to the willows along the shore in a sector of comparatively still water.

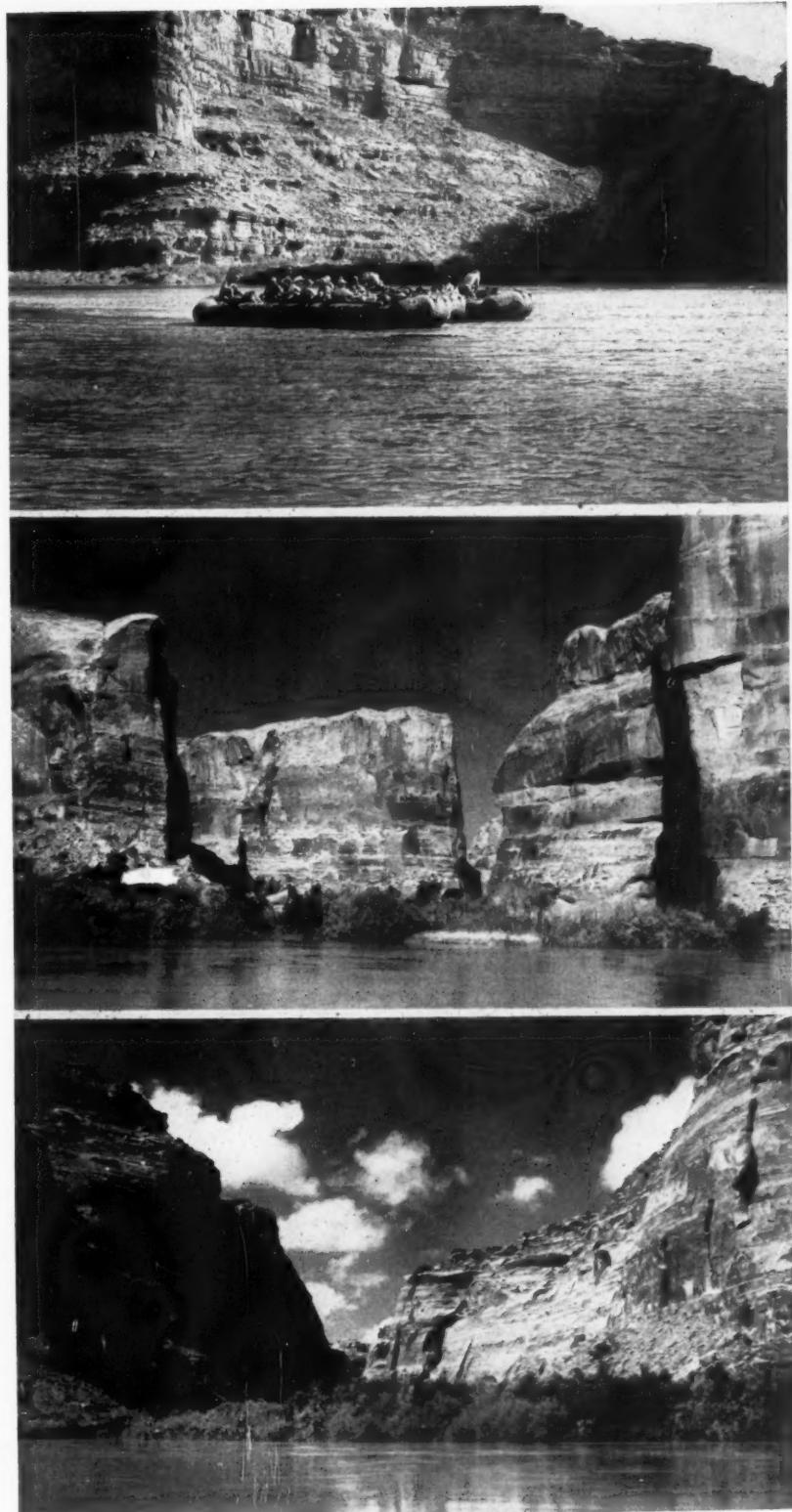
This boat, I learned later from a letter (*Desert*, Oct. '57) belonged to Burton G. Odell of Amarillo, Texas. Running the western rivers is his vacation hobby. He had left Greenriver alone in the little boat with two outboard motors, expecting to float down to the junction with the Colorado, and then return upstream to Moab. But his motors were not powerful enough for the upstream pull in this flood stage and he decided to continue through Cataract Canyon to Hite, knowing little about the treacherous water ahead.

He navigated the first three rapids, then in the fourth one collided with a rock, lost one motor and sheared off an oarlock. He realized he could not continue through such rough water with a partially disabled boat. He tied the craft to the willows and hiked out of the canyon. It was a difficult trek and he suffered from lack of water. Several days later he stumbled into a survey camp in Beef Basin in San Juan County.

Georgie White considered loading the boat on her big barge, and also towing it downstream. But it was too heavy to be taken out of the water, and a tow job in such a river would be too hazardous. When we left, the skiff was again tied to the willows with its remaining motor lashed in the bottom. Since then Odell has made an effort to retrieve his boat, but at last report it was still moored there.

At 3:30 in the afternoon we arrived at a grassy bottom where there was ample space and abundant driftwood for a night camp, and Georgie headed the big barge for a landing. We all welcomed the opportunity to dry out and get warm again.

During the four days we had been on the river together I had acquired



Labyrinth and Stillwater Canyons, in the opinion of the author are no less scenic than Glen Canyon of the Colorado River.

a great admiration for the competent manner in which our leader had managed the details of the expedition. This evening as we lounged around a blazing campfire I asked Georgie some of the questions in my mind. She talked candidly of her early life.

Of course it is taboo to ask a woman her age, but I would guess she is 47, a slender bronzed woman with a tremendous capacity for hard work.

She was born in a tenement district in Chicago. Her father, of French descent, was an artist, often out of work. Her mother was an industrious woman who toiled as a breadwinner during the day and often worked late hours into the night to keep the home tidy and to make sure the children went to school next day with their meager clothes freshly washed and starched.

Georgie is a vegetarian—not as a fad but simply because she does not care for meat. "We did not have much meat in the house when I was a kid," she says, "and it wasn't too good. I quit eating meat as a youngster, and have never cared for it." Her staple item of food is tomato juice and this with other vegetable items gives her tremendous energy. Years ago, on a trip down the Escalante River with her, when the water was shallow and we had to do much portaging, I saw her on more than one occasion shoulder two 40-pound neoprene cases of food and trudge through the sand with them.

After her school days were over she wanted to get away from her tenement district surroundings, and went to Florida seeking work. Those were depression days and when Florida failed to yield an adequate job she went to New York where she was employed by a florist.

On off days she would spend hours walking in Central Park—just because she liked the outdoors. In the Park she became acquainted with members of a cycling club, and soon was an enthusiastic rider. In 1936 she was married and she and her husband later crossed the continent to Los Angeles on their bicycles.

As soon as her daughter Sommona was old enough, she became her mother's companion on bicycle trips that occupied many of their weekends.

When World War II came, Georgie obtained a job in the security staff of Douglas Aircraft, but her tremendous vitality always was calling for more activity than any ordinary 8-hour job would provide. "I never stayed on one job long enough to earn a paid vacation," she explains.

At the Douglas plant she became interested in aviation, and a ferry pilot's job was her next goal. When she

learned that 35 hours of flying experience was necessary to qualify for the training school the Ferry Command had set up, she gave up her job and invested her savings in pilot training at a private aviation school at Quartzsite, Arizona. She was an apt student, and soon qualified for Ferry training. But by the time she had completed the 500 hours preparatory to a Ferry assignment, the war was nearing an end and the Ferry Command was deactivated.

Back in civilian life she took out a real estate license. She wanted work that would allow plenty of free time for her hiking and cycling. Then in 1944 her daughter was struck by a drunken auto driver, and killed. Georgie became more restless than ever, and she asked the Los Angeles chamber of commerce if there were any hiking clubs in the city. They referred her to the Sierra club. She became a Sierra member and has been on many of the climbs of the Desert Peaks section.

At the home of friends in Los Angeles she met Harry Aleson who was showing kodachrome pictures of the canyon country where he was a boatman. When she learned that Harry shared her interest in cross-country hiking, they arranged a backpack trip together. Other long jaunts with their bedrolls and food in their knapsacks followed. They conceived the idea of swimming the Grand Canyon with their gear on their backs in knapsacks. On two river excursions they paddled many miles of the Grand in their swimming trunks.

In association with Harry Aleson it was only natural that she should become interested in fast water boating, and she accompanied Aleson as helper on some of his expeditions.

In 1951 she bought her first neoprene raft from a war surplus store—and that was the beginning of her career as a river pilot. In 1954 she took a party through the Grand Canyon—in a year when the river was so low other boatmen cancelled out their trips. There was much portaging at the rapids, and Georgie was turning over in her mind plans for relieving her passengers of this back-tiring chore.

It was following that trip that she conceived the idea of lashing three rafts together side by side. The theory is that the push of the rafts behind, or the pull of the rafts ahead, will force the flat-bottomed boats over rock obstructions which would bar the way to a single raft. Actually the tremendous power of the cascading water is the factor that makes the method effective.

Georgie's 1957 schedule is evidence of her tremendous capacity for organi-

zation and work. Here are the trips she booked for the season:

Two Easter week trips on the lower Colorado for the Sierra Club and Boy Scouts—81 passengers.

April and May, charter trips through Grand Canyon from Lee's Ferry to Lake Mead—4 passengers.

May, down the San Juan from Mexican Hat to Kane Creek—33 passengers.

June, Cataract Canyon—23 passengers and boatmen.

June and July, another Grand Canyon trip—70 passengers.

July and August, down the Middle Fork of the Salmon River, two groups—33 passengers.

August, Salmon River run—35 passengers.

August, Hell's Canyon on the Snake River—37 passengers.

September, two trips through Glen Canyon with Sierra Club and Boy Scouts—85 passengers. Total 401 passengers.

In addition to her boatmen, Georgie has two faithful associates who do much of the shore work. Her sister, Rose Marie DeRose in Los Angeles, carries the office work and correspondence involved in booking the trips and keeping contact with passengers. Her husband, "Whitey," whom she married in 1942, is a tower of strength on shore duty. He trucks in the boats and supplies for the start of each trip, inflates the neoprenes, and with Georgie, does the critical roping job required to keep the 3-raft barges intact in all kinds of water. Last season they used a ton of nylon rope.

The schedule requires a small fleet of neoprene rafts of various sizes and at the end of each expedition Whitey deflates them and hauls them off to a new start on some other river. On occasion Whitey has taken to the river as a boatman, but his shore duties keep him so busy there is little time for the rapids.

Friday, June 14, was our wettest day. From 7:30 a.m. to 3:30 in the afternoon we ran one rapid after another, and spent the minutes between cataracts bailing water out of the rafts.

Once the torrent swept us into a deep hole. We rode to the top of the first 12-foot wave below, but our timing was wrong—the breakers were too close together for our clumsy craft. The next wave caught the barge as it was rising, and neatly curled the lead boat upside down on top of the middle raft in which I was riding. The oarsman and his two passengers landed on top of the three of us in the center section. The dilemma was easily solved. The six of us simply lifted the raft off our heads and flopped it back in its proper place and the pas-

sengers returned to their seats. This rapid was the daddy of them all, but we emerged from the experience with only minor scratches and bruises.

The character of the river, and especially the rapids, changes at every stage of the water. In a discharge of 100,000 second feet or more, most of the boulders that normally give trouble to boatmen are submerged. Some of the low water rapids disappear entirely. For instance the rapid at the mouth of Dark Canyon was reputed to be one of the worst in the canyon but when we arrived there it was only a heavy riffle.

But while high water smooths out some of the rough places, the velocity and power of the stream at flood stage creates new problems. Boatmen generally prefer to navigate the fast water streams of the West at a lower level. The veteran pilot, Norman Nevills, regarded 25,000 to 30,000 second feet as the ideal stage.

Later, when we reached the USGS gauging station at Hite we learned we came through Cataract on a discharge between 108,000 and 110,000 second feet.

At 3:30 in the afternoon we had passed all the rapids in Cataract. We had lost 415 feet of elevation in 41 miles compared with a fall of two feet to the mile in Labyrinth and Stillwater Canyons.

We camped that night at the mouth of the Fremont River, which Jack Sumner on the first Powell expedition in 1869 had dubbed the "Dirty Devil."

We spread our bedrolls on the same slick rock bench where Powell had camped 87 years ago. I climbed the low hill back of our camp and found it to be a rockhound's hunting ground. The ground was strewn with good specimens of agate, jasper and petrified wood which obviously had not yet been discovered by the collecting fraternity.

Fremont River virtually marked the end of our excursion. It was a smooth water ride of but an hour and a half next morning downstream to Hite Ferry crossing where Wayne Nielsen of Richfield was waiting with a truck to carry us back to Greenriver.

We had navigated Cataract rapids at their worst and had gained a wholesome respect both for the canyon of the cataracts, and for the leadership and skill with which Georgie White had brought us through. Within three hours after we landed, Georgie had taken off in a chartered plane for Lee's Ferry where another group of passengers was assembling for a ride through the turbulent waters of Grand Canyon, Georgie's third trip through the Grand in one season.



Above—the Fremont (Dirty Devil) River enters the Colorado at the left.

Center—We got a puncture.

Below—When driftwood was running, passengers took turns at the bow of the big barge to keep it from fouling the propellor.

Promising Wildflower Season Predicted for Desert . . .

A mild fall combined with far more than the usual number of gentle rains, may result in a bumper wildflower crop in the lower and warmer desert areas in February, *Desert Magazine* correspondents report. Flower prospects for the high desert areas also are excellent, but the big show there will come 30 to 60 days later.

Lucile Weight of Twenty-nine Palms says that the highways from Indio to Blythe, and Newberry to Needles are fringed with green shoots. On the rocky slopes between the Granites and Clipper Mountains, northeast of Amboy, patches of green annuals were under nearly every bush, among them

evening primrose, pincushion, chia, forget-me-not, lupine, delphinium and poppy seedlings. She found new growths of delphinium, lupine and many other species in the Old Woman Mountain areas. On all slopes of the Little Chuckawallas millions of seedlings are coming up.

Scattered verbena was in bloom before year's end along some Coachella Valley roadways, and sprouts of many other species are everywhere in evidence on the valley floor and foothills. February visitors to the Coachella may witness one of the most outstanding floral displays in many years.

Seedlings are showing in some parts

of the Anza-Borrego Desert State Park, reports Park Supervisor Clyde E. Strickler. A few desert lilies have started to sprout and if January brings additional moisture Strickler predicts some early display.

Park Naturalist Bruce W. Black of Joshua Tree National Monument says prospects are good for a splendid wildflower year, with Cottonwood Wash and Pinto Basin the best probable areas. Black expects the bloom peak to be in April, although several plant varieties on the lower elevations already are in flower and more will be out by February, he added.

The southwestern Mojave Desert (Antelope Valley) also was treated favorably by the winter rain gods, but Jane S. Pinheiro of Quartz Hill believes February will be too early for flowers there. "It should be a very good year, especially for poppies, but April and May are the best months in the Antelope Valley," she wrote.

At Death Valley National Monument, Park Naturalist M. B. Ingham says any flower displays during February will be below the 1500 foot level. He reports that the valley received considerable early winter rain.

An above average display is predicted for February by Chief Ranger John T. Mullady of Organ Pipe Cactus National Monument — if the strong January winds which ruined last year's promising crop do not return.

Penstemon and numerous other wildflower sprouts are up in Saguaro National Monument, wrote Park Ranger Robert J. Heying. If no late killing frosts occur, February visitors probably will see lupine, poppy, heliotrope, purple mat, fairy duster, paper-flower and bladder-pod blooms.

Good fall rainfall resulted in the germination of winter annuals and some growth of filaree, Indian wheat and annual grasses in the Casa Grande National Monument, says Archeologist Alden C. Hayes. He predicts a better than average showing of blossoms from February on into spring.

Earl Jackson, naturalist at the Southwest Archeological Center in Globe, Arizona, reports that the Upper Sonoran Desert in the Globe vicinity received unusually good rainfall and some southern exposures of low hills are thickly dotted with young lupine plants. It also will be a good year for blue dick (hyacinth).

February promises a good display of mallows, lupines, phacelias and primroses at Lake Mead National Recreation Area, according to Park Naturalist William D. Tidwell.

TRUE OR FALSE:

Important. These questions take you into the worlds of geography, history, botany, mineralogy and the general lore of the desert country. These are big and interesting worlds—that every American should know something about. Twelve to 14 is a fair score, 15 to 17 is good, 18 or over is excellent. The answers are on page 30.

- 1—One of the most poisonous insects on the desert is the tarantula. True _____. False _____.
- 2—White Ocotillo is common in many parts of the California desert. True _____. False _____.
- 3—Panamint range is on the west side of Death Valley. True _____. False _____.
- 4—Many of the cliff dwellings found in the Southwest are still occupied by descendants of the original builders. True _____. False _____.
- 5—The land where Nogales, Arizona, is located was acquired by the United States in the Gadsden Purchase. True _____. False _____.
- 6—Brigham Young brought the first Mormon colonists to Utah after the civil war. True _____. False _____.
- 7—An arrastre was a tool used by the Spaniards for hewing logs. True _____. False _____.
- 8—A sidewinder is seldom more than 24 inches long. True _____. False _____.
- 9—The break in the Colorado River which formed Salton Sea in 1905-6-7 occurred in Mexico. True _____. False _____.
- 10—The color of the chuparosa or hummingbird flower is red. True _____. False _____.
- 11—According to legend the fabulous Seven Cities of Cibola were located on the Mojave desert of California. True _____. False _____.
- 12—The agave or wild century plant of the Southwest generally dies after its first flowering. True _____. False _____.
- 13—The tortoises found in the southwestern desert are hatched from eggs. True _____. False _____.
- 14—El Tovar is the name of a famous hotel in Death Valley. True _____. False _____.
- 15—The infamous Mountain Meadows Massacre occurred in Utah. True _____. False _____.
- 16—Paul Jones is chairman of the Navajo Tribal Council. True _____. False _____.
- 17—A calcite crystal will scratch a quartz crystal. True _____. False _____.
- 18—Petroglyphs were painted on the rocks, pictographs incised in the rocks. True _____. False _____.
- 19—Tuba City is the name of a town in New Mexico. True _____. False _____.
- 20—The All-American canal which serves the Imperial and Coachella valleys of California, is a diversion from the Colorado River. True _____. False _____.



The 400-ton cyanide mill at Goldacres makes it possible to profitably mine \$5 a ton ore.

Open Pit Miners at Goldacres



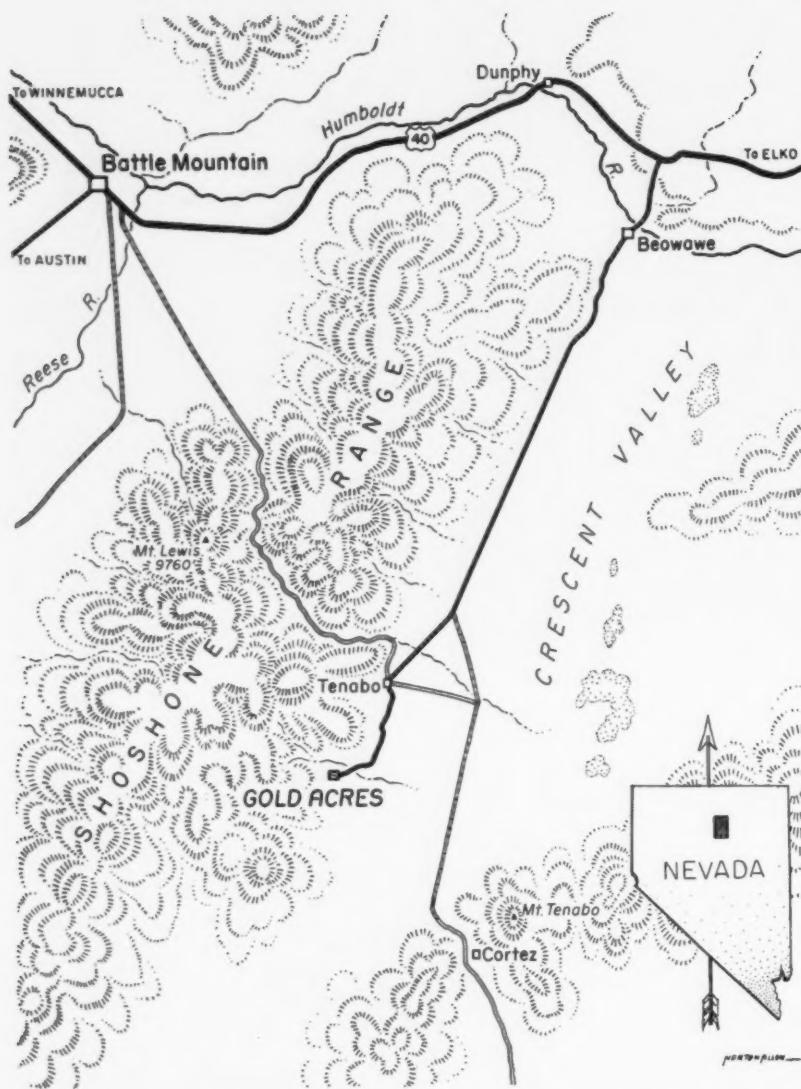
There's a feeling that all is right with the world at the small gold mining and milling camp at Goldacres, Nevada. Despite its isolation and lack of citified embellishments, Goldacres' wages and living conditions are good, work is steady, the mine manager is respected—and you can't beat the bright expansive Nevada desert as a place to live.

By NELL MURBARGER
Photographs by the author
Map by Norton Allen

SINCE 1942 when Uncle Sam decreed that gold mining was not essential to the war effort, gold producers of the West have been fighting an uphill battle. Even the war's end did not mean that the country's gold mines could automatically resume operation for during these years of enforced idleness timbering and equipment deteriorated, underground workings in many cases had become flooded, and cost of labor had nearly doubled. As a result of this unsavory situation—plus the fact that the mint price of gold has not been permitted to rise above \$35 a fine ounce where it was pegged in 1934—nearly every major gold mine west of the Rockies has remained closed.

In the course of my post-war roaming over the West, I had seen so many inoperative gold mines and mills I began believing that lode gold mining, like buffalo hunt-

Harry C. Bishop, manager of the Goldacres operation.



ing and wagon freighting, was an occupation of the past.

And then, last summer, I heard of the London Extension Mining Company of Goldacres, Nevada.

That any lode gold mine can operate profitably by marketing its product at a price established in the middle of the Depression years while paying today's high wages, indicated that it was either a remarkable mine or had a remarkable manager. In the case of London Extension, I found the reason for success was a combination of these factors.

Perched on the east flank of the Shoshone range at an altitude of 5600 feet, the mining camp of Goldacres overlooks the wide flatness of Crescent Valley, bare but for greasewood and sagebrush, a ranch or two, an occasional windmill and stock-watering tank, and a dry sink that gleams hot

and white in the desert sun. At the north end of this valley, 30 miles from Goldacres, the double tracks of the Southern Pacific and Western Pacific railroads are straddled by the small cattle-shipping station of Beowawe. And 36 miles west of Beowawe is Battle Mountain, a town of less than 1000 inhabitants—the most populous center between Winnemucca and Elko, and home of the only doctor and drugstore in an area nearly half as large as the state of New York.

That the 130 residents of Goldacres, including 60 mine and mill employees and their respective families, find it possible to live and work harmoniously in a degree of isolation far greater than that which prevailed in many of the boomcamps of two generations ago, seems almost as amazing as the fact that Goldacres is making money for its stockholders at a time when most

gold mines have given up the struggle. Again, I suspect that the answer is found in the person of Harry C. Bishop, manager of the London Extension.

I saw Harry Bishop in action only a few minutes after my arrival at Goldacres. Driving through the camp, with its neat white dwellings and clean streets and yards, I halted in front of a white frame building that bore a small sign identifying it as the office.

Harry Bishop was at his desk—a tall serious balding man who appeared to be nudging the 50-year mark. We had chatted for half an hour when the star route carrier from Beowawe stopped his vehicle in the office yard, removed three mail sacks from his load and carried them into the office.

Interrupting our talk with a murmured apology, Harry opened the mail sacks and began distributing letters and second-class matter into half-a-hundred regulation postoffice boxes built into one wall of his office, with their locked doors facing the open lobby so that their contents were available to patrons at any hour of the day or night.

Arrival of the mail stage had the effect of a bugler sounding assembly. Within a few minutes women and children were streaming toward the postoffice from all sections of camp. For each patron, Goldacres' non-official postmaster had a few personal words of greeting—an inquiry into some matter of health or family fortune, or a bit of banter. Many of the women addressed him as "Harry"—and when the wife of a miner or millman feels free to call her husband's boss by his given name, a company has little cause to worry about labor relation problems.

As soon as the last piece of mail was put up and the parcel post packages stacked in the lobby where their addressees could sort over them, Harry Bishop and I resumed our visit.

Because of its name, Harry explained, many believe London Extension is owned by English capital, but there is not one stockholder in the British Empire. The name originated when his father, the late Harry Bishop, Sr., took a contract in 1905 to extend a development tunnel in the South London Mine at Alma, Colorado. To finance this work he organized the London Extension Mining Company, disposing of stock among his friends and relatives in Colorado and his boyhood state of Ohio.

In 1933 the senior Bishop—who was secretary-treasurer and general manager of the company—came to Nevada and early the following year bought for his group an equity in 16 claims, including ground located 10



Goldacres miners and their families live in these company-owned cottages.

years earlier by a prospector named Lee Lankin. Some of these claims form the nucleus of the present Goldacres Mine. When clear title was obtained six years later, ownership passed to Consolidated Goldacres Company, a wholly-owned subsidiary of the London Extension Mining Company.

Development of Goldacres began in the fall of 1940, and by the next spring the outlook was so promising Western Knapp Engineering Company of San Francisco agreed to build and equip a mill. Development and operation of the property was carried out by Consolidated Goldacres until the summer of 1948 when title again passed to London Extension.

After doing business for over 50 years, London Extension is stronger today than ever. Its holdings include 20 patented lode claims, 41 lode claims held under mineral filings, and 47 placer claims. A closed corporation—its stock cannot be bought on the open market—it is owned in its entirety by 55 shareholders, most of whom are heirs of the original purchasers, and is headed by 81-year-old Fred C. Bishop, of Centerburg, Ohio, a brother of the company's founder.

After 15 years under the capable management of Harry Bishop, Sr., "young" Harry was appointed to that position upon the death of his father in 1955. No man was better qualified to assume the reins of management. Except for two years in the Engineer Corps during World War II, Harry had been in the employ of the company since 1939. During the post-war years when the War Production Board would not permit gold mines or mills to buy new equipment or repair parts,

he had spent most of his time running from one inoperative mill to another trying to buy used machinery to keep Goldacres in production. Despite his best efforts at scavenging during that critical period, the plant operated only on a diminished scale.

"We didn't set the world afire," said Harry. "But, at least we kept some of the wheels turning most of the time."

From Harry's office I drove the half-mile graveled road to the mine.

Although I knew Goldacres was worked by the low-cost open pit method, I was astounded at the immense size of the excavation formed here in the past 17 years! Not that it challenges Ruth copper pit or Bingham Canyon, to be sure, but the fact that so much material has been removed by so few men seems almost beyond belief. The area worked is 1600 feet long and 800 feet wide, with a depth of approximately 100 feet—which means that over 42,000,000 cubic yards of dirt and rock have been drilled and blasted, loaded and trucked away for milling, or dumped over the bank as waste.

The ore yields from \$5 to \$6 per ton in gold, with a trace of silver, and during the past 15 years approximately 2,000,000 tons of ore have been put through the mill. During 1956, 1,042.694 tons of material was hauled out of the pit—190,000 tons of it ore and 853,000 tons waste. At present the ratio stands at about five tons of waste to one ton of ore. Later, when a caved area has been worked out, the ratio will drop to about three-to-one.

In the mining operation 18-foot vertical wagon-drill holes are sunk on 10-to-12 foot centers. These holes are

"sprung" or chambered at the bottom and charged with 50 pounds of powder which is fired electrically. The 18-foot benches, including both waste overburden and ore, are mined by power shovels and trucks—two shifts of drillers being able to keep one shift of shovels busy. The mill works around the clock.

Determination of which material is waste and which is millable ore, depends entirely upon assay tests—samples being taken from each drill hole at 6, 12 and 18 feet depths.

"Our entire mining program is based on assay reports," said Harry. "The gold is deposited in brecciated lime and it is so extremely fine that I don't believe anyone on earth can examine our ore with even the most powerful microscope and tell which is worth milling and which isn't."

"One time I thought I'd have a go at panning it. I mortared some rock with extreme care and panned it just as carefully as I was able. When I finished I was quite proud of myself—until a subsequent assay showed that I had saved none of the gold. My pan tailings ran as high as my concentrate!"

At the east edge of the pit stands the 400-ton cyanide plant through which this elusive gold must pass on its way toward becoming bullion. Crushed to one and one-half inches, the ore is fed into a Marcy ball mill where it is ground. This discharge, in turn, is classified, and the sand (minus three-eighths inch, plus 65 mesh) is transferred to open leaching tanks for about 120 hours, after which the slime is treated by counter current decantation, and filtered. A Merrill-Crowe precipitation unit then recovers the gold.



Ore is mined by open pit method.

which is molded into bars and shipped to the U.S. Mint at San Francisco.

With 60 men employed in drilling, shovel work, heavy trucking and milling, it seemed to me that in the course of a year a considerable number of accidents must occur. Yet, when I asked Harry if the company maintained a camp hospital, he said no.

"Even if we could afford to employ a doctor or registered nurse, we probably wouldn't be able to find one willing to live this far from town. Fortunately, we haven't had any bad accidents."

But, despite their extreme isolation and lack of medical facilities, the people of Goldacres are very fortunate. Compared to the "good old days" when mining camp dwellers lived in dugouts, tent houses and dirt-floored shacks pieced together from coal-oil cans and packing cases, these folks are living in comparative luxury. In addition to 32 one-family dwellings ranging in size from two to five rooms and each neatly painted and maintained in top-notch condition, the camp includes eight apartments, a 30-bed bunkhouse for unmarried men, boarding house, a well-stocked general store owned by Mr. and Mrs. Bruce Warmbrodt, and an elementary school at which two teachers conduct full-time classes for an average attendance of 25 pupils. The camp is completely modern. Water is pumped three miles from a well in Crescent Valley to a large tank located sufficiently high above camp to assure

good fire-fighting pressure. Sewage disposal is provided, and electric power is generated on the premises.

At noon Harry suggested that I eat lunch at the company boarding house.

"It'll give you a chance to see how we feed our men, and I'm sure you'll enjoy Mrs. Burrus' good cooking," he said.

In the cool spic-and-span dining room, where not a speck of dust was in evidence, a dozen men seated at a long oilcloth-covered table were eating with greater appreciation of good food than was ever felt, I am sure, by Duncan Hines. On the table sat steaming platters of juicy roast beef and bowls of brown gravy, mashed potatoes, sage dressing and lima beans cooked with ham. There was jello fruit salad and canned pears, scalding pitchers of coffee, and for dessert, pineapple pie.

After Harry Bishop introduced me to Mrs. Burrus, the cook, she set an extra place for me at the table and started the sundry bowls of food moving down the table in my direction. The food was well cooked, well seasoned, and served in an appetizing manner. Such a menu, at any small-town restaurant of my acquaintance, would cost between \$1.50 and \$1.75, plus tip. Yet, my table companions assured me that this meal was "only average" of the 21 a week they are served—with all the second helpings they want—for only \$12.60.

Perhaps policies of this sort are responsible for the fact that several of London Extension's employees have been with the company for more than 14 years.

Later, as I was climbing the hill to the water tank to photograph the mill and pit below, a woman called to me from her front porch.

"Are you the girl who is getting a story on Goldacres?" she asked. I said I was—wondering, at the same time, how the grapevine could have disseminated this information so quickly.

"My husband saw you taking pictures over at the pit this morning," went on this friendly miner's wife. "We're from Sacramento. We've only been here two weeks, but we sure like it. We like this bright clear air!"

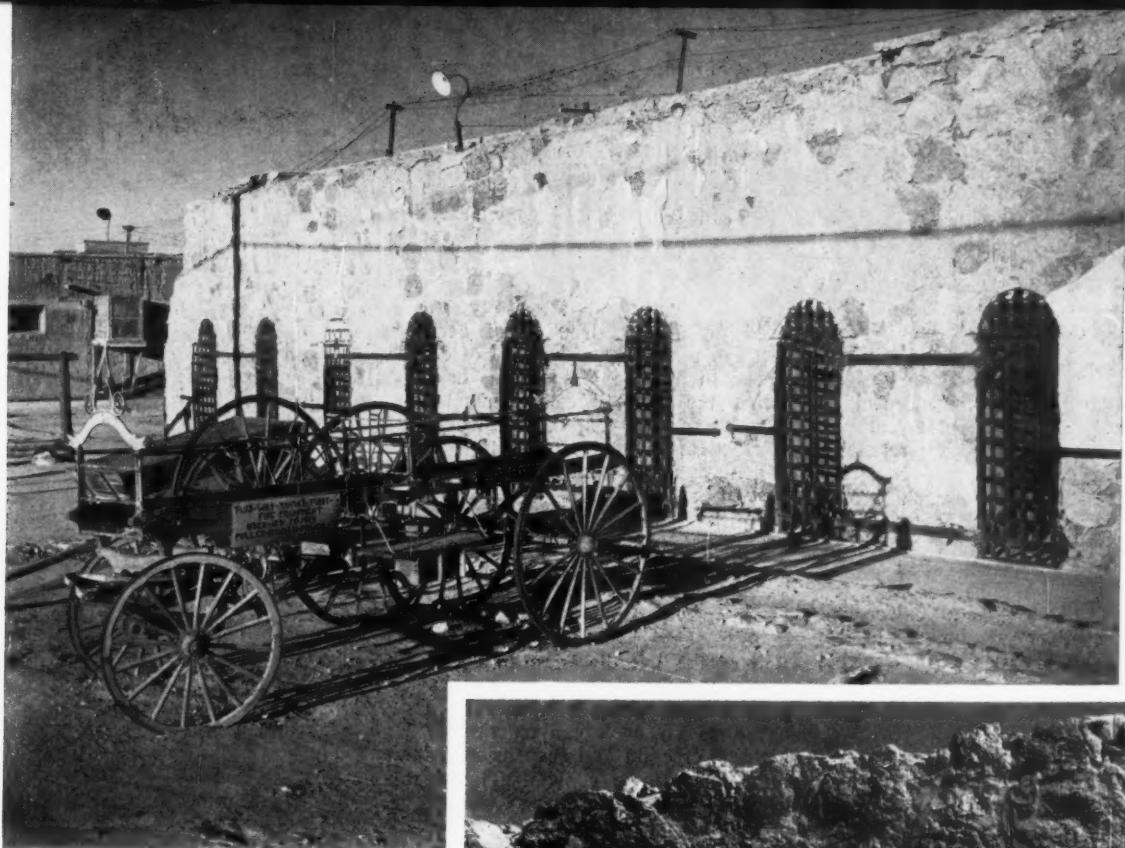
"How did you happen to come here?" I asked. "Did you answer a help-wanted ad?"

"Oh, no!" said the woman. "Our son-in-law has worked here for several years. He and our daughter think there's just no place quite as good as Goldacres! They were after Dad for a long while to come up here and go to work. They told us what a grand fellow Mr. Bishop is to work for, and that working conditions were fine, and they liked the climate. So, finally Dad and I sold our place in the Valley and came up here—and from what we've seen of it, I don't think we're going to be sorry! Like our son-in-law has always said, Goldacres is a good camp to tie to!"

A good camp to tie to! It had been a long while since I had heard this expression that old-time miners commonly used in referring to favored camps where wages and living conditions were good, work was steady, and the management respected.

As I headed back through Crescent Valley to Beowawe and on to Battle Mountain, I was grateful that it had been my privilege to visit Goldacres. I had found pleasure in meeting and talking to Harry Bishop, and in seeing the mine and mill in operation. I had relished my meal at Mrs. Burrus' boarding house, and had enjoyed my talk with the friendly woman in the miner's cabin on the hillside.

But greater than all this, I think, was the feeling of "all rightness" this place had given me. It had done my heart a world of good to know that there is one mining camp where the roar and clatter of a ball mill still sounds around the clock, where gold still is poured into bullion molds, and the grand old phrase—"a good camp to tie to"—still falls affectionately from the lips of workmen.



These cell blocks once housed many desperate criminals, but today Territorial Prison is a tourist point of interest.

HISTORIC PANORAMAS XII

Territorial Prison

By JOSEF and JOYCE MUENCH

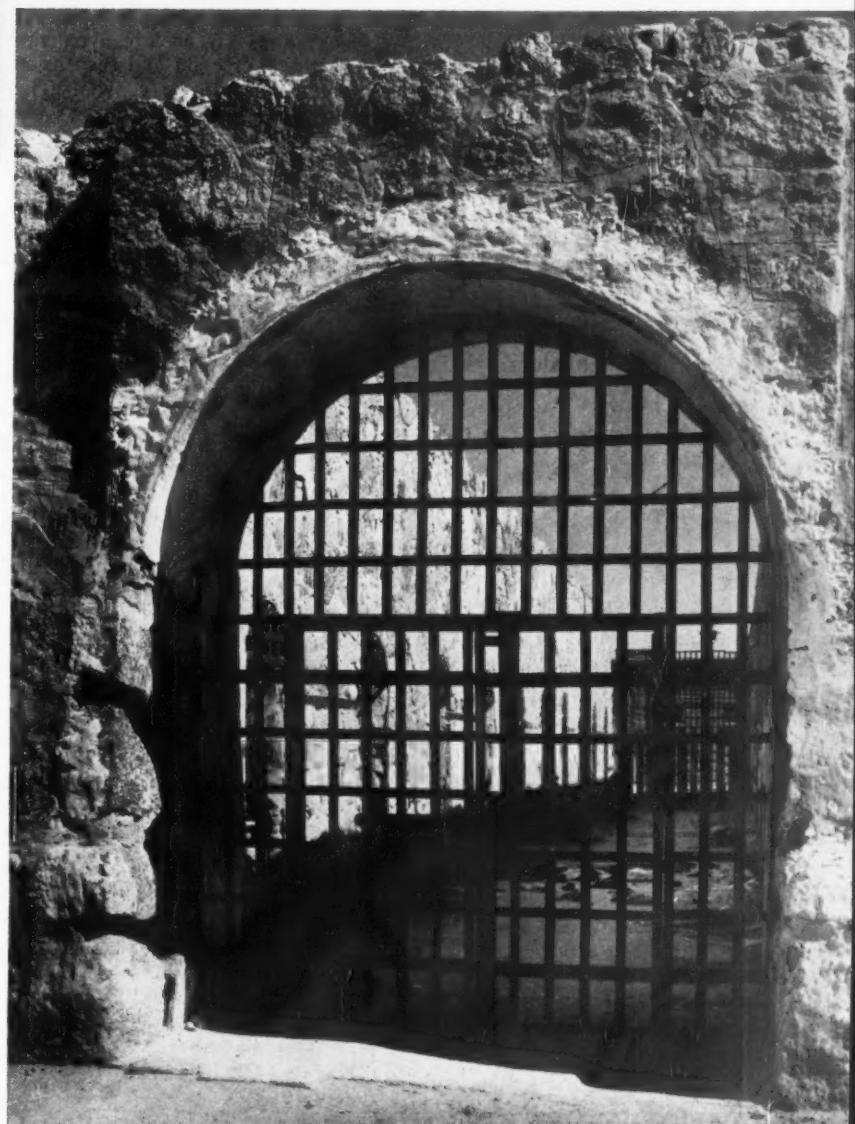
At Yuma, Arizona, on a bluff overlooking the Colorado River known as Prison Hill, stand the grim forbidding ruins of Territorial Prison.

Congress authorized establishment of this prison in 1867. Eight years later, still not completed, the first prisoners arrived and were put to work on the construction job. All of the stone and mortar buildings as well as caves into the bluff for the incorrigibles were built by men condemned to occupy them.

If the punishment fit their crimes, then they were bad men indeed who were incarcerated in the cramped and dreadful Dungeon Block and the Main Cell Block. The prison was deactivated in 1909.

Before acquiring its present status as a museum, the prison served for four years (1910-1914) as Yuma High School, which still calls its athletic teams, "The Criminals."

The prison's main cell block, built by inmates.



Progress on Three Upper Basin Dams Told by Reclamation Bureau

Work at Glen Canyon, Navajo and Flaming Gorge damsites, major units of the \$760,000,000 Upper Colorado River Storage Project, advanced along several lines during the past year, the Department of Reclamation reported.

While a contract for actual construction of a dam and powerplant only had been awarded for Glen Canyon (*Desert*, April, '57) at year's end, the Department's time table called for the issuance of invitations for bids on Flaming Gorge dam and powerplant (*Desert*, Jan., '57) in January of this year with awarding of a prime contract in late spring. Invitation for bids on the Navajo dam and powerplant is expected this spring.

Glen Canyon

Efforts at Glen Canyon have cen-

tered on the construction of access roads to the damsite; the start of construction on the suspension bridge across the canyon; establishment of facilities for carrying on construction at the damsite; and preliminary work to achieve diversion and control of the river at the damsite.

During the year prime contractors Merritt-Chapman and Scott Corporation established offices, warehouses, trailer housing, dormitories, mess halls, commissary and related facilities at the damsite. Under sub-contracts, excavation of the left diversion tunnel and powerhouse service road tunnel have been started, along with spillway excavations on each canyon rim, and highline erection and suspension footbridge across the canyon. The right

diversion tunnel was holed through in November and final clean-up is in progress.

Over \$6,000,000 in contracts have been awarded for town facilities at Page, Arizona, the Glen Canyon damsite community. Work is underway on streets; water and sewer distribution systems; sewage treatment plant; and water supply system. Permits for the construction of business, service and other establishments are to be granted this year. The Page school enrollment grew from 150 in September to 300 in December.

Flaming Gorge

During 1957, considerable pre-construction work was done on Flaming Gorge Dam on the Green River. Field data was obtained for use in preparation of the facility's final designs and specifications.

Principal field construction centered on the building of the access road from Linwood, Utah, and the start of construction of the Flaming Gorge community on Dutch John Flat. The road is scheduled to be completed in June.

A \$2,600,000 contract was awarded last June for the building of facilities for the Flaming Gorge community, and completion of the job is due in February, 1959. However, some houses probably will be ready for occupancy in mid-1958. Work on the water system will be undertaken this year, and the government hopes to move construction headquarters and personnel from Vernal, Utah, to Flaming Gorge by late summer.

Navajo Dam

Navajo Dam on the San Juan River will be a large earth and rockfill structure about 405 feet high and 3600 feet long. Water from its reservoir will be used for the proposed Navajo Reservation irrigation project and the San Juan-Chama project.

Activities during 1957 were limited to pre-construction investigations to obtain design and construction data, and to the beginning of construction of a small temporary camp near the damsite for Federal personnel. Major work included exploratory drilling and examination of the damsite and the borrow areas (areas from which materials used in construction of the dam will be obtained); surveys to establish construction controls; and examination of right-of-way requirements.

The Navajo Dam camp five miles downstream from the damsite, is scheduled for completion in June. Fifteen temporary residences are planned for the camp. A 10-mile access road is expected to be started early this year from a point three miles east of Blanco, New Mexico, to the damsite area.

Hard Rock Shorty of Death Valley



an' lost a dime there one day—
an' then spent two years diggin'
till he found it.

"But them explanashions is all wrong. I know what made that hole. That wuz where ol' Pisgah Bill had his gunpowder mine. Bill found that mine back in the '90s when he wuz out prospectin' the north end o' Death Valley. He sat down on a rock one day an' lit his pipe while he did a little contemplatin'. When he threw the match away it set fire to a rock lying there on the ground. Bill got all excited and started diggin' an' sure enough he hit a rich deposit o' black powder.

"Bill wuz skeered somebody'd jump his claim, so he slept in the tunnel every night. One night he left his wallet with some matches lying beside his bedroll. Durin' the night the packrats found them matches an' started chewin' on 'em. When the place exploded it blew Pisgah clear up on the side o' the Panamints, an' if he hadn't landed in a big fir tree it'd probably a killed him."

An old Model T stopped in front of the Inferno store and the occupants came inside to refresh themselves from the barrel of apple cider the proprietor always kept on tap.

"Been up to that crater," one of them explained — "Ubehebe crater, they call it."

The speaker glanced around the room at the wrinkled prospectors seated on the counter, the bags of potatoes, and a couple of rickety stools. "Any of you fellers living here when that volcano was blowin' off?" he asked.

Hard Rock Shorty was the first to answer. "You'll hear a lot o' different stories about the big hole," he explained. "But don't you believe none o' them. Scientific fellers say it wuz a big blow-out when a lotta gas accumulated in the ground an' exploded. Some folks think it wuz a volcano.

"Over in Rhyolite one day I met a feller who claimed it wuz dug by a Scotchman. Said the ol' Scot had a hole in his pocket

Loop Trip Through the El Pasos . . .

The whole family will enjoy making this short junket through the El Paso Mountains on the western Mojave Desert. It's a land of gorgeous canyon scenery, rich mining history and beautiful rockhound treasures—an arid desert range with a colorful past and a hopeful future. And as for the present, there is plenty of room on top for camping, prospecting and hiking.

By EUGENE L. CONROTT
Map by Norton Allen

"I'M GOING up there to see a miner," said the sun tanned desert man, pointing to the bleak El Paso Mountains behind us. "Want to take a ride?"

I was more than happy to accept, not only for the opportunity to travel again through this historic mining and rockhound country, but to take another desert junket with Godfrey Lawrence of Cantil, California. He has spent over 25 years on the Mojave Desert, all of it in the country from Indian Wells Valley south to the Antelope Valley.

We threw our canteens in the back seat of the ranch wagon and with my four-year-old son, Duane, and the 14-year-old Lawrence family dog, Butch, left the Cantil General Store on U.S. Highway 6 and drove north.

The El Pasos are not a lofty range, rising only 2900 feet at their highest point above the 2000-feet-above-sea-level desert floor, to form a low but massive barrier between the Indian Wells and Fremont valleys.

Five main parallel canyons drain south from the El Pasos in this vicinity: Red Rock (*Desert*, Feb., '56) which we drove through on Highway 6 and whose spectacular red-brown towering sandstone cliffs are an attraction people drive hundreds of miles to see; Last Chance (*Desert*, May, '42), one of the earliest and most popular rockhound collecting locales in Southern California; Mesquite; Iron; and Goler (*Desert*, Mar., '52), where the German prospector Goler's lost placer ground was re-discovered. The canyons lie in this order, from west to east.

Past Red Rock the terrain broadened out and the bright sun-filled horizon was broken by the dark rounded volcanic summits of the El Pasos.

At 8.4 miles north of the Cantil General Store we turned right (east) onto a dirt road at the far side of a little knoll. This is a well-bladed county road connecting Inyokern and Highway 6 and should not be confused with a road of similar appearance a few

yards south of it on the near side of the knoll. Positive identification is afforded by a sign a few feet from the highway on the county road directing motorists to "Lee's Copper Basin."

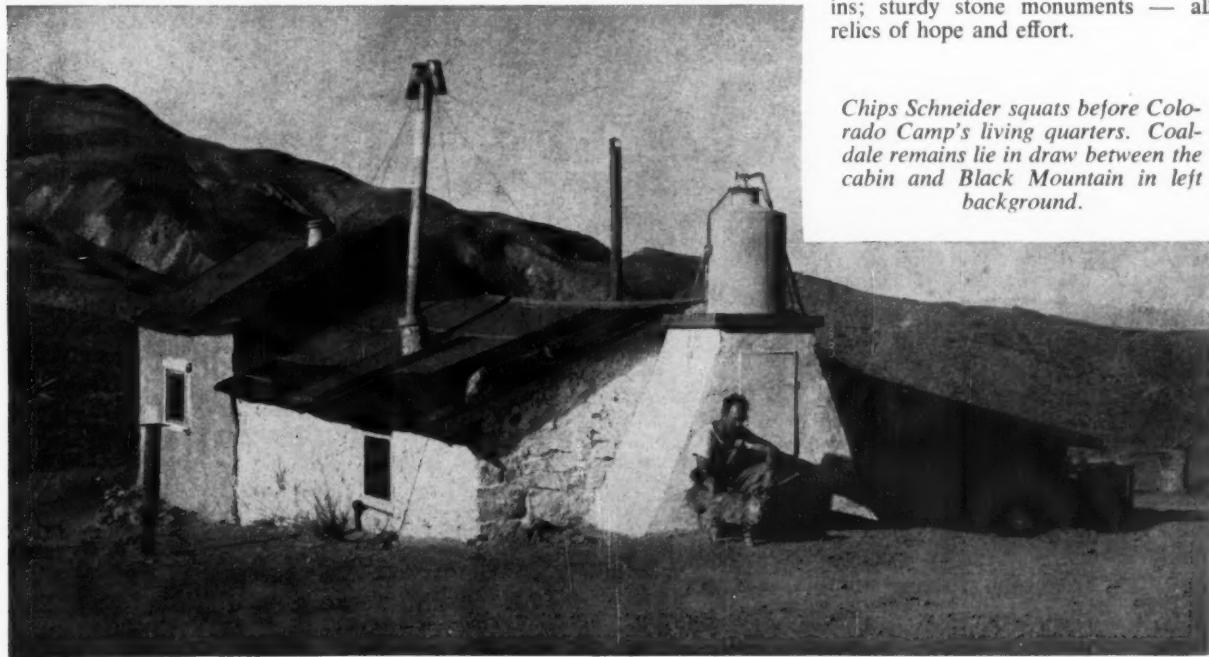
Up to this point we had been making an almost imperceptible climb, but now the trail more noticeably pitched upward as we started across the wide bajada. There are several forks and junctions on this plain and in the canyons we traveled that day, and the accompanying log should be consulted by those planning to use this "back road" into Last Chance.

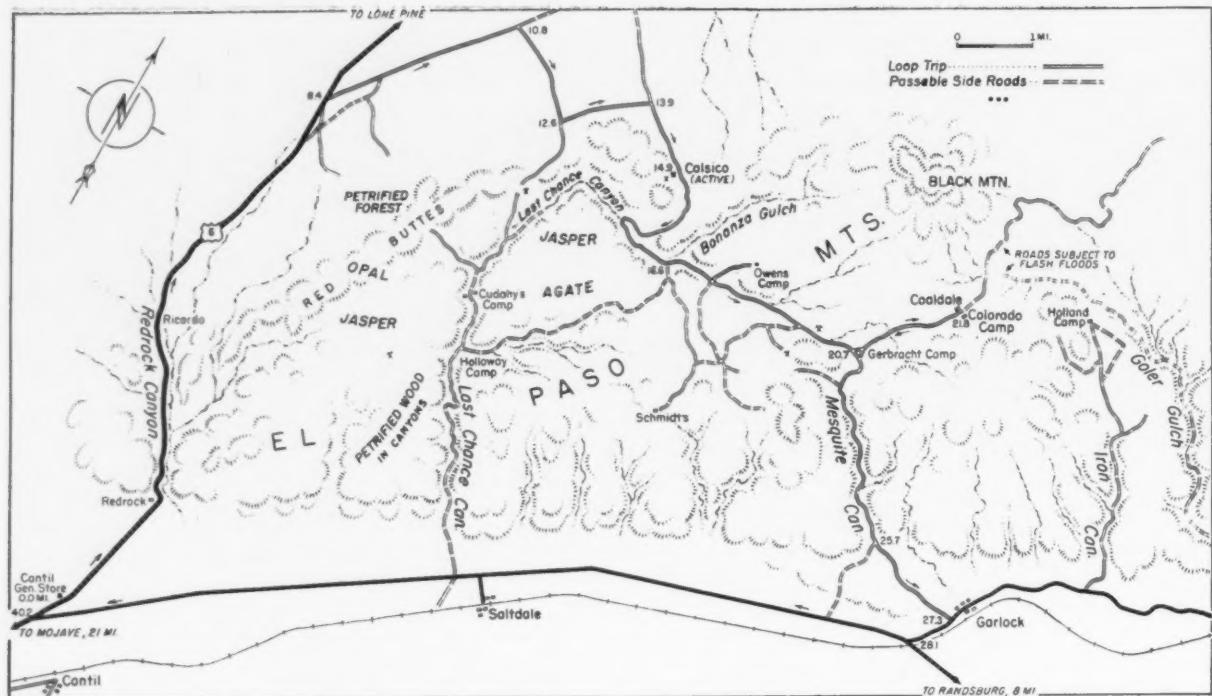
At the top of the pass are the gleaming white buildings of Calsico Mine and Mill. Here pumice and silica taken from the great cavity on the mountain face above the mill are ground into various grades of fineness, depending upon the proposed use of the material.

From the saddle of the mountain we dropped into the upper reaches of a Last Chance Canyon tributary. So far the entire trip had been made in high gear and with the greatest of ease.

As we drove deeper into the canyon the sheer walls loomed higher above us. Here was evidence of the mining activity of bygone days—black openings of old mines, tunnels and shafts hacked out of the sides and floor of the canyon; bare dumps beneath and beside these portals; faint side trails leading from the main road; tiny cabins; sturdy stone monuments—all relics of hope and effort.

Chips Schneider squats before Colorado Camp's living quarters. Coal-dale remains lie in draw between the cabin and Black Mountain in left background.





The El Pasos were the scene of considerable placer gold activity in the 1890s, and even up to a few years ago in greatly diminished amounts. Volcanic ash deposits here for many years were important pumicite sources, but recent discoveries of bigger and better tuff layers in other sections of the state have reduced the significance of these deposits.

However, a great number of active claims in a variety of minerals abound in these mountains, and every weekend will find at least one dusty vehicle loaded with mining paraphernalia and the inevitable barrel of water, on the canyon trails.

Into view came the beautiful pink and white exposures of bentonite and other clays on the dark canyon walls below. At the junction with the main canyon road we parked the car and got out.

Creosote, the most widespread of all desert vegetation, was scarce indeed. In its place grew gnarled scrub mesquite.

A million years before the Sierra Nevada west of the El Pasos began to emerge, oak, fan palm and locust grew in the green meadows of this once-lush paradise. On the surface it is impossible to conceive that this country ever could have had an abundance of water and animal life. On this entire trip we did not see one person who was a permanent resident of these mountains except the miner we visited. Later I was told by Kern

EL PASO MOUNTAINS LOOP TRIP LOG

- 00.0 Cantil General Store on Highway 6, approximately 21 miles north of Mojave. Drive north from here through Red Rock Canyon to
- 8.4 Turn right onto county-maintained dirt road on north side of knoll. Sign reads: "Lee's Copper Basin Camp."
- 10.8 Fork. Turn right.
- 12.6 Fork. Keep left. Road to right leads to "Stormy's Camp."
- 13.9 Junction with road from Hart's Service Station on Hwy. 6. Keep right.
- 14.9 Calico Mine and Mill. Keep left. Just over rise is upper reaches of Last Chance Canyon tributary.
- 16.6 Junction. Right fork leads to Last Chance Canyon proper. Turn left, up canyon to
- 20.7 Delta Gerbracht's Black Mountain Mining Company. Right fork leads down Mesquite Canyon. Keep left to
- 21.8 Colorado Camp and Coaldale site. Four-wheel drive recommended for down-canyon trails beyond. Return to
- 22.9 Gerbracht's (20.7). Turn left to Mesquite Canyon.
- 25.7 Fork. Right leads to Randsburg Highway. Keep left to
- 27.3 Garlock. Turn right to
- 28.1 Randsburg Highway. Randsburg is 8.2 miles east of this junction. Turn right to
- 40.2 Highway 6 just below Cantil General Store (00.0).

County predator controller Richard Wonacott that wildlife is especially scarce in this range. He has heard reports of three or four wild burros further to the east and a few bobcats and coyotes in the canyons.

Conclusive proof of Last Chance's greener youth — the petrified forest down canyon — now lies below the surface. Collectors have carried off all the exposed logs, but those who do not mind a little work still can find beautiful specimens of this material. The technique is to probe the ground with an iron rod. When a hard object is struck, the rockhound digs down to it and—if he is lucky—it will be a piece of petrified wood. The opal beds below the petrified forest still yield specimens, and some brilliant but small fire opals have been taken from these hills. Most of the opal and wood areas are on private land and intermittently rockhounds have been allowed to collect on them by paying a small fee to a caretaker.

Collectors also are finding moss and other agates in the El Pasos, but the quality of this material is not too good. A fourth rockhound prize, jasper, also awaits the person with a little prospecting skill and a willingness to search a rich area long ago classified as "worked out."

We took to the worn dirt road and continued eastward into the broadening reaches of the range's summit. Arriving at Colorado Camp we again were on the slope of a wide bajada



The El Paso Mountains as seen from the Randsburg to Cantil cut-off, looking northward. Garlock is at foot of mountains in center.

with the El Paso range on our right and 4938-foot Black Mountain on our left. Due north stretched the flat expanse of Indian Wells Valley.

Colorado Camp's broad inclined yard is flanked by a cabin fronting the road, and a garage-shop on the higher ground. The several open shafts, diggings and prospect holes on the property are in the rimrocks and gullies behind the shop.

One of the old-timers who worked his claims in the waning days of the El Paso's mining boom was C. E. French—"Frenchy" his friends called him. He had owned the 26 claims of Colorado Camp where in past years six percent copper ore had been discovered. The son of U. S. Grant

financed the digging of the 200-foot-deep and 450-foot-long main copper ore shaft. Besides the copper the earlier miners had passed over or missed, Frenchy was developing gold, silver, molybdenum and lead prospects on the property.

Out of the cabin partly dug into the sloping yard came Maynard "Chips" Schneider to greet us. Chips is a raw-boned balding man of 46. Living and working mostly alone during the last few years, he had absorbed the calm of his desert mountain habitat and I had to strain to hear his softspoken and polite conversation.

By a strange coincidence, Godfrey Lawrence was responsible for Chips' being in these mountains.

Four years ago, during the height of the uranium boom, Chips quit the sea after 22 years spent mostly in the Orient, and purchased some prospecting gear. His destination was Lone Pine to the north, but an old mortar and pestle in Godfrey's cactus garden attracted his attention and he stopped to investigate.

Soon the two men were in a mining conversation and Godfrey suggested that Chips prospect the El Pasos. Besides, Frenchy, who was seriously ill, was looking for help and Chips probably would be able to get work.

"It's a small world," said Godfrey in telling this story. "Seems that Frenchy once worked for Chips' dad, and he and the younger man got along

Garlock ruins at base of El Pasos. Second building from right is Grandma Slocum's shack where fallen windmill once supplied water to area's prospectors.



famously. When Frenchy passed away he willed Colorado Camp and all his mining equipment to the ex-sailor.

Chips invited us into his neat cabin to look over ore specimens. The rough interior walls were covered with mementoes of the orient—Japanese water paintings, Philippine knives—and on a bookshelf were two huge volumes of a Japanese-English dictionary.

Chips handed me two beautiful pieces of heavy copper ore shot through with green splotches, glistening silver, and dark stains of gold sulfide. "See why I'm sitting on this hill?" he asked with a smile. "It's not like it was in the '90s when they picked up gold nuggets here by the lard-pailful, but these hills are still plenty rich."

He told of a new excavation being made back of the shop in which a deposit of fluorescent rock has been uncovered. We picked up some of this material and that night when we put it under the black light it glowed a brilliant pink and red. It has not yet been determined whether these stones are in the calcite or zinc families, and their only distinguishing characteristic by daylight is a film of dull yellow rust. This is a rare deposit and col-

lectors have come to secure specimens from as far away as San Diego. It must be remembered, however, that Colorado Camp is private property and permission to hunt for fluorescent material must be obtained from Chips or his assigns. No miner objects to sharing a stone or two, but they cringe when someone drives up with a dump truck. And it is never in bad taste to offer to pay for specimens collected.

Between Colorado Camp and Black Mountain is shallow Colorado Gulch in which there is a noticeable outcropping of black ore. The several cabin clearings surrounding it are all that remain of Coaldale, one of several coal boom towns in California.

Before development of the state's oil resources, the hope of discovering coal was uppermost in the minds of industrialists.

Coaldale's coal operation began in 1894 and lasted six months into 1895, according to the late Finley Buhn who was born and lived his 83 years in this area. With his team, Buhn hauled three or four loads of this material to a blacksmith in nearby Randsburg. But, the coal was no good—in fact it was asphaltum tar and smoked badly

when burned. After the shaft was abandoned a flash flood destroyed it.

During its heyday, Coaldale had nearly 75 residents—all male. Despite the lack of women—or perhaps because of it—Coaldale was a peaceful camp, Buhn recalled. Some of the men who lived here were placer miners who had drifted over from the earlier gold camps in Red Rock Canyon and Black Mountain. The Goler and Randsburg booms followed these strikes, the latter becoming the most important California mining boom in the '90s.

At Coaldale the gold miners lived in tents while the coal miners had a wooden bunkhouse. In addition there were a few cabins, a cookhouse and an office.

The afternoon shadows were lengthening rapidly when we said goodbye to Chips and started back down the trail. We took the left fork at Della Gerbracht's Black Mountain Mining Company headquarters and headed down Mesquite Canyon. The narrow Mesquite road was rougher than any of the trails behind us, and required careful driving.

Soon we emerged into the broad fan that sweeps down to the ghost town of Garlock and out across the desert plain to the Rand Mountains beyond. Visible above the waist-high forest of creosote were the silent crumbling adobe and battered wooden walls flanking both sides of the dead city's paved highway.

Garlock predates Randsburg. It was the milling and supply center for the placer miners in the El Paso canyons, and Randsburg's first gold ore was hauled here for milling by 20 Mule Team wagons over a nine-mile sandy trail. This valley's main traffic today consists of a few cars that skirt the El Pasos from Highway 395 to Highway 6—and the desert tortoises which breed here in large numbers.

The stone walls of Garlock's big saloon still are in good condition, but the windmill has crashed through the roof of Grandma Slocum's shack and the exhausted jumble of sun-warped wood is sinking lower and lower into the desert soil. For many years after Garlock died, this windmill supplied water to local prospectors.

We turned south along Garlock's main street and at the junction of the Randsburg Road Godfrey swung right onto the paved route paralleling the El Paso Mountains, now deep in shadow and sunset vermillion.

As we drove the 12 miles back to Highway 6, I glanced often at the low range which has passed through the full cycle of time.

Profit From Your Photos . . .

February on the desert means snow in the high ranges, a nip in the air, and sparkling clear skies to delight the photographer. The pictures you take on the desert in February—or any month—are welcomed entries in Desert Magazine's photo contest. Any desert subject will do — Indians, wildflowers, wildlife, panoramas, ghost towns—the possibilities are endless. You will profit by regularly entering the best of your black and white desert scenes in this easy to enter contest.

Entries for the February contest must be sent to the Desert Magazine office, Palm Desert, California, and postmarked not later than February 18. Winning prints will appear in the April issue. Pictures which arrive too late for one contest are held over for the next month. First prize is \$10; second prize \$5. For non-winning pictures accepted for publication \$3 each will be paid.

HERE ARE THE RULES

- 1—Prints must be black and white, 5x7 or larger, on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.
- 4—Entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

Address All Entries to Photo Editor

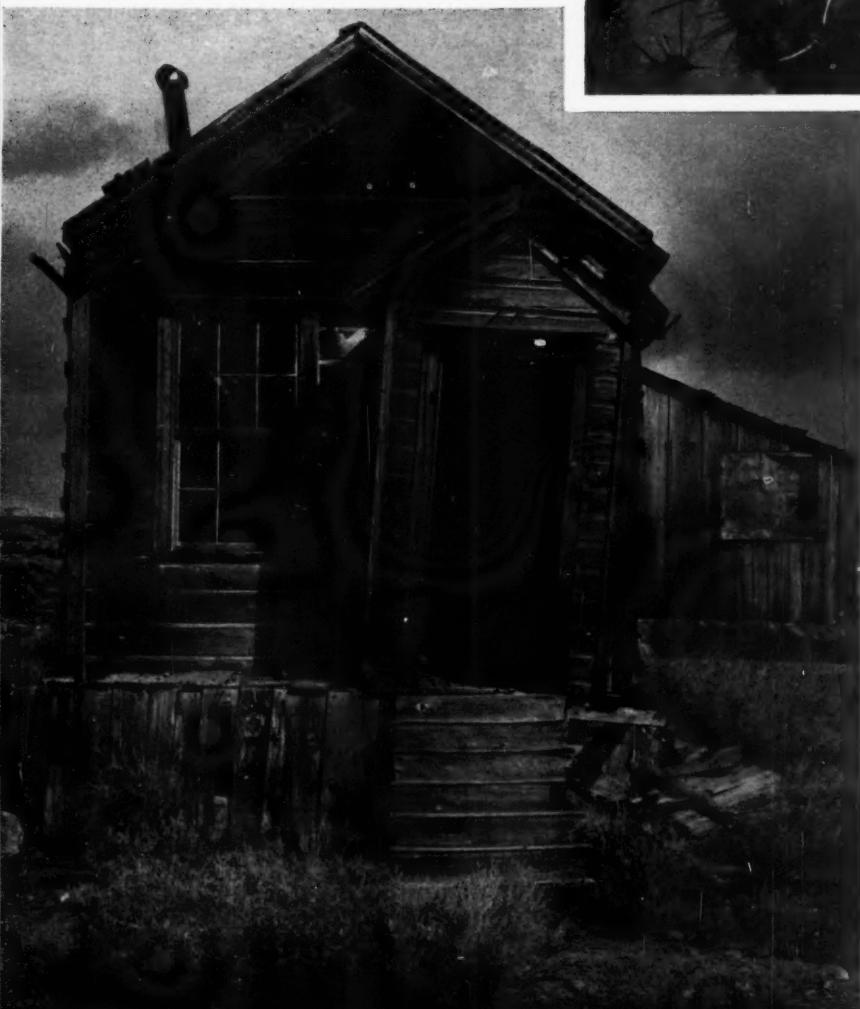
The Desert Magazine

PALM DESERT, CALIFORNIA

Cactus Pad...

To the uninitiated the cactus is a forbidding plant. But lovers of the desertland know it as a plant of symmetrical beauty and more — a symbol of the fulfilled desire to survive by adaptation in an environment never generous with the ingredients for lush plant life. Anyone who has seen a seemingly dead cactus awaken into full life after a desert storm knows that this plant is a marvel of Nature. This month's first prize photo was taken by Paul E. Black of Inglewood, California.

Pictures of the Month



Bodie Ghost House...

Deserted building in the ghost town of Bodie, high on the eastern flank of California's Sierra Nevadas, is the subject of the second prize picture. It was taken by J. Meyer-peter of nearby Bishop. Bodie was a rugged mining camp with a reputation for bad men, good drinking water and, because of its nearly 9000 feet altitude, the world's worst weather. Camera data: 4x5 Graphic View camera; 163 mm. B&L lens; orange filter; Super XX film; 1/100 sec. at f. 8.

ON DESERT TRAILS WITH A NATURALIST -- XLVI



Surface of Soda Lake is covered with dry puffy salt-encrusted mud.

Life on an Ancient Mojave Playa . . .

Water in the underground-flowing Mojave River rarely reaches its ultimate destination—a chain of salt-encrusted playas on the floor of a sandy depression. But despite its outwardly stark appearance, this is a unique land possessing much that is of interest and beauty to the desert explorer.

By EDMUND C. JAEGER, D.Sc.
Curator of Plants
Riverside Municipal Museum
Map by Norton Allen

AFTER IT emerges from the high narrow walls of colorful Cave Canyon in eastern San Bernardino County, California, the erratic Mojave River's flat bed broadens out over the rocks, sands and gray gravels and heads easterly into a long trough which extends northward to the southern extremity of Death Valley. On the floor of this arid valley lie, in line, three dry-surfaced playas or dry lakes: Wedge-shaped Soda Lake, 12 miles long and six wide at its southern end; Silver Lake, and Silurian Dry Lake, named after the adjacent Silurian Hills.

Only occasionally does water flow over the final broad channels of the Mojave River into Soda Lake, aptly known as the Sink of the Mojave. The Union Pacific Railroad's deflecting

rock levee at the lower opening of Cave Canyon diverts most of the ordinary storm waters into an ancient channel which leads to East Cronise Dry Lake north of the highway and at the base of the Soda Mountains. After traversing Cave Canyon, the railroad strikes eastward along the Mojave channel.

The big spring storm of 1938 sent a sufficient volume of water down the main channel not only to cover the surface of Soda Lake, but Silver Lake as well. Vividly do I remember the unique experience of taking a refreshing swim in both of those lakes that year. Silver Lake was shoulder-deep and beautiful indeed was the broad sheet of quiet water around me, shimmering like polished silver in the bright

desert noonday sun. At times I could see the images of the nearby highly convoluted mountains reflected on the smooth surface. These are coveted sights seen but two or three times in a lifetime. It gave me an opportunity better to envision the larger and deeper Pluvial Lake Mojave which occupied with some permanence this same intermountain basin nine milleniums ago.

Those were times when Quaternary-Age aboriginal man dwelt here and hunted ground sloths, three-toed horses, antelope and smaller animals along the brush-covered margins of the lake. And from the lake he took fish and clams (*Onodonta californiensis*).

The waters of the 1938 storm have long since evaporated, and Soda Lake is again a dry barren playa. On a clear day last November with my friend Gerald Becker, I again traveled over the flat surface of the lake. Now it is covered with dry puffy salt-encrusted mud, and littered in places with round dark brown to black vesicular pebbles and sizeable boulders of basalt which had washed down from nearby volcanic hills. Walking on the mud-surfaced areas was like treading on a carpet of spongy rubber. The southern and especially the south-eastern borders of the playa were covered with fine near-white wind blown sand.

Although much of the flat playa surface seemed at first to be unusually barren and devoid of life, we frequently stopped the car and investigated the rubbery flats which in many places were heaved up into strange small "bumps" by salt crystals, or

shrunken to form polygonal "cakes" separated by narrow but rather deep fissures.

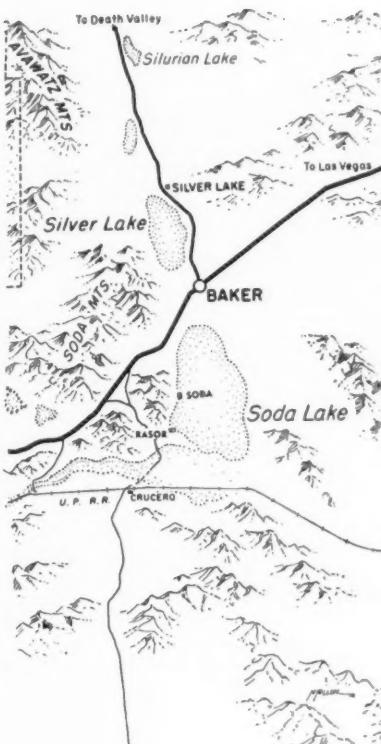
Becker pried up some of these mud blocks and found beneath them and in the separating cracks small brown crickets and soft-bodied Thysanura or silver fish.

We concluded that these insects were attracting the several small flocks of horned larks we had seen earlier in the day. They may furnish the needed liquids that make it possible for these hardy solitude-loving birds to exist on waste places far from water. Quite often I see flocks of horned larks far out in the center of large dry lakes. And perhaps the several killdeer we saw, birds usually associated with pond borders and wet meadows, had found in the crack-dwelling insects something to appease their appetites and quench their thirst.

These and other birds also feed on small seeds blown in by strong winds, or on seeds cast by the unattractive fine-stemmed inkweed or Sueda, and on the vividly green salt-tolerant pickleweed which we saw growing in some areas on the lake.

All about us was entrancing scenery, varying from vistas of distant mountains such as the Providence and Granite ranges to nearby somber-shaped volcanic or calcareous mountains upon whose flanks lay lacy-edged drifts of whitened sand.

Every motorist approaching the small wayside settlement of Baker on the north end of Soda Lake must be impressed as we were that day by the strange small gray rocky eminences of fantastic form to the west. The nearest of these is a hill of pure stratified limestone, actually an outlier of the nearby Soda Mountains. If ever a place seemed like an unlikely abode for living snails, this was it. Yet, our search among the rocky gullies on its precipitous sides—even those with hot southern exposure—soon revealed that



land snails do dwell amidst the rocks and deep crevices. The ones we collected that day are known as *Eremioronta bakerensis*.

Shells of small snails of the genus *Physa*, often called bubble-shells, and of a large flat-spiralled snail, *Planorbis*, are found nearby in the ancient beach sands of Lake Mojave. These beaches are some distance from, and 20 feet above the surface of the present dry lake clays.

At several places on Soda Lake we found where the United States Geological Survey had drilled core holes in 1952-3 as part of its investigation of the salt deposits on the Mojave Desert. They probed to depths up to

1070 feet, and while no saline beds of commercial value were located, interesting evidence of the old lake's past was revealed. The drills went through layers of gravel, mud, silty clay, sand and volcanic ash. Study of the latter material provided scientists with additional clues to the time and nature of the volcanic activities of the dark-colored and well-formed group of craters 20 miles to the east.

At the south end of the playa water is quite close to the surface and we found a broad area where there is an extensive growth of large honey and screw bean mesquite trees, scattered willows, inkweed, saltbushes and salt grass.

After five miles of westward travel we came to the old Tonopah and Tidewater Railroad station of Rasor. The road, really just two very deep ruts made by former travelers brave enough to try to traverse these flats after rains when muds were deep and slippery, led through luxuriant stands of salt grass, often so salt-encrusted that it crackled under foot when we walked on it.

Only the old station house among Rasor's abandoned buildings appeared to have been recently occupied. To our surprise, water was leaking from the huge elevated wooden tank, evidently kept filled by cattlemen for their stock. This water is of fair quality for it was mineral-free enough to be used in the boilers of the now-deceased Tonopah and Tidewater's steam locomotives. A tall Washingtonia palm, a large eucalyptus tree and some giant tamarisks gave a cheerful aspect to the deserted station, named in honor of the T&T's Chief Engineer Clarence M. Rasor.

Just south of Rasor are several of the channels of the Mojave River which carry flood water into Soda Lake. It is an area of deep sands, in many places blown about by strong winds and lodged at the base of mesquite trees. As the trees grow upward

Salt grass meadow at the southern end of Soda Lake. Ground water is shallow here and mesquite, screw bean and willow trees also flourish in the alkaline soil.





Blowsand is everywhere in the Mojave River channel south of Raros. Predominant vegetation is creosote and shrubby mesquite trees.

to keep from being buried, large hummocks, some 20 feet high, are formed, atop which sprawl the green mesquite branches.

Before making camp in this charming place, we walked among these lovely mesquite - crowned hillocks, studying the numerous tracks of desert denizens. Especially evident were the dimpled tracks of coyotes, kit foxes, kangaroo rats and pack rats—always welcome comrades of the desert camper.

When the old Salt Lake Railroad (now the Union Pacific) was built through here 50 years ago, quite a number of homesteaders took up land in this sand and alkali encrusted basin known as Crucero Valley. Some believed this would be a good place to raise dates and they cleared the land, dug a few wells which never yielded much potable water, became discouraged and left. Scattered among the thickets are the remains of old shacks and fence posts.

One of the ambitious homesteaders was an Arizonan named Whitney. He came with a queer source of material wealth on which to get started—18 coffins. Whitney was an undertaker and vowed he would never leave Crucero Valley until all his coffins except one were filled—and that one he reserved for himself. According to one version of the story, his strange vow was fulfilled, but the late Elmo Proctor, for many years a local resident and acquaintance of Whitney, reported that most of the coffins were stored in an old "barn of a building" after Whitney's death. Later they were torn

open and despoiled of their rich brocaded silken linings which were utilized in the valley "to make fancy underwear for the ladies," Proctor said.

In places, especially in the winter season, small streams of bitter salty water meander over Soda Lake's flat gray surface, some discharging from below, others coming from saline springs along the western and southwestern lake edge.

The largest of these upwellings of water is at Soda Springs, once a camp on the emigrant routes and later a station on the T&T which ran along the western side of Soda Lake. An outcrop of limestone brings water to the surface here. The natural discharge is considerable and recently has been increased by the sinking of wells.

Soon after establishment of Camp Cady to the west, the Army built strong redoubts at Piute Springs and Soda Lake, the latter known as the Hancock Redoubt, to protect emigrants against marauding Indians. Hancock Redoubt undoubtedly was named for Assistant Quartermaster Captain Winfield Scott Hancock of Los Angeles who was instrumental in opening the wagon road across the desert along the route of the Whipple Survey, for the delivery of supplies to Fort Mojave. Ruins of the redoubt's buildings and high corral walls gave rise to the popular but erroneous name, "Old Fort Soda," for this post. The late T. S. Palmer, ornithologist, explorer and historian, told me that most remains of old buildings at Soda Springs only date back to the building of the T&T

which was completed in 1907. Some of the old rock buildings have been converted into a dining hall and headquarters for the Zzyzx Mineral Springs health resort.

About the time of the first World War, a religious colony occupied the area near Soda Springs. The founder, Pastor Charles T. Russell, claimed that he was guided to the place by a vision that he would find gold in the nearby hills to finance his colony. German aliens among the colonists involved the whole group in trouble. Russell was imprisoned along with several members of the colony and the offending Germans. The religious leader died October 30, 1916, and the Soda Springs settlement was abandoned.

Russell and his converts built five frame houses at Soda Springs and spent \$50,000 in an effort to mine gold in the adjacent mountains. The houses later were torn down and used in building the first structures at Baker, a few miles to the north.

Some of the waters at Soda Springs are drinkable but highly charged with minerals, the principal ones being sulphate of soda, calcium and magnesium. One of the springs nearby has water carrying large amounts of Epsom salt.

At several places along the playas' western borders where springs emerge, saltbush, inkweed, rushes, sunflowers, yerba mansa and cressa form a bordering margin of herbaceous semi-woody and woody plants. The sunflowers recently were described as a new species and named *Helianthus jaegeriana* by Dr. Heisy of Indiana University in allusion to my first collection of it.

LIFE ON THE DESERT

The Desert Gave Us A Way to Live . . .

When the Great Depression struck, not a few homeless and jobless people turned to the desert. Here the cost of living was inexpensive — a rent-free cabin, a bucket for water, deadwood for fuel—and the helping hands of neighbors everywhere in evidence. Despite the lack of luxuries or even many of the things which have come to be considered necessities, home-making on the desert was a happy life.

By DOROTHY ROBERTSON

NON THE dark days of the depression of the 1930s my husband and I moved to our very much unimproved homestead on the Mojave Desert near Hesperia, California.

We were as poor, if not poorer, than the rest of our few scattered neighbors. Except for two or three well established old-timers in the district, we all were homesteaders, jobless and generally in the same predicament.

But in depression times, the desert is a good place in which to live for there is no overhead—provided you have water and enough food to keep going! Many times my husband and I considered ourselves lucky if we had a whole head of lettuce, a box of crackers, or a five-cent loaf of bread for a full day's rations.

On exceptionally fortunate days, we were able to trade a few hours work on one of the big ranches for either milk and eggs, butter, or, upon rare occasions, a steak or two. Sometimes our pay included an extra bunch of carrots, bag of beans or even a dollar. How big that dollar looked to us then! We'd spend whole evenings thinking over all the things we needed, finally deciding what was most important to buy with the money.

Once in a great while when the storekeeper went into San Bernardino, we landed a day's or even a half-day's job at his little establishment in what passed for the nearest town. Then we'd take our wages in staples.

We had put up a small shack on our property—little more than four walls and a roof—but we called it

home. We did not have electric power which meant, besides not having electricity bills, we had neither lights nor a refrigerator. Our perishables, when we had any, were placed in a covered pail hung down in the well. This kept them reasonably cool. The well was hand dug—20 feet deep and four feet wide.

There was seldom extra money for gas and oil for Lizzie—our faithful Model A. It was our only means of transportation to town or to the homes of our parents should circumstances become desperate. Being gasless meant that we stayed put 360 days out of that first year!

Both of our parents were comfortably fixed, and sometimes the temptation was great to return to a bounteous table. But pride and a desire to make good on our own little ranch kept us going. We merely punched a few more holes in our belts and tried a little harder.

One thing that I shall never forget is the generosity and camaraderie of my just-as-needy neighbors. When one family bagged a jackrabbit, it was cut into small pieces and handsomely augmented with potatoes and vegetables either begged or borrowed. Then the call went out to "Come on over, folks." The resulting stew was reason enough for a dinner party, and I mean dinner party!

They just as easily could have kept the rabbit for themselves, but instead they shared their good fortune with less lucky neighbors. The desert seems to breed people like that—bringing out the best in them.

Naturally, the neighbors reciprocated in kind, and even though we were so poor and sometimes downright hungry, yet we were a happy bunch. No one appeared ill—in fact we seemed to thrive. Certainly we were too busy scratching out a living to have time to become discontented. We were thankful when there was something to eat, and we learned that idleness and surfeit are the highroads to unhappiness. Strange to say, none of us were afflicted with that malady.

The clothes problem did not exist for us desert rats in those days. We

all wore jeans and shirts, and when the knees wore through we'd cut them off and wear the pants as shorts, using the salvageable parts of the severed legs for patches on our seats. We were a thrifty lot then—we had to be to get by.

In the fall a neighbor told the group how the Indians went pine nut gathering, and we reasoned that if Indians could live on pine nuts, so could we. A pine nut picking party was organized and everyone chipped in the nickels they could spare for gasoline. Into the biggest truck available we piled old blankets, poles, bushel baskets and cartons, and headed for the San Bernadinos and pinyon-pineneland.

Harvesting the cones was hard work, but the pine nuts were both delicious and nutritious when roasted. Each family picked enough nuts to last several months when used as supplements to their regular diets.

One day a young couple—Bill and Bunny—arrived in our corner of the desert with a last gasping wheeze of their gas-starved vintage sedan. They had eight cents to their name and there they sat, a boy and girl still in their teens, and their big collie dog, Hector. Yet another mouth to feed. What would become of them? The neighborhood was worried for no one could give them much.

But this was a truly amazing couple who soon became an inspiration to the neighborhood. Bill told us that his wife was seriously ill. They had left their home in a bleak northern town with a hundred-pound sack of raw wheat which he had threshed, and enough money for gas and oil to get them west, with a prayer in their hearts and a smile on their lips, to find the sunshine-land.

The kids had evolved an idea (ultimately proven quite sound, but then adjudged peculiar by some) of living almost exclusively on wheat. It was cheap and nutritious. They did mix in butter and raw honey, when they could get it, and salt and a little sugar. And how long that sack of wheat lasted!

I have long since forgotten all but a few of the hundreds of different ways Bunny and Bill prepared their wheat, and I still use some of these recipes. They had a little hand-grinder and made their own wheat flour fresh daily. Even Hector seemed to relish the wheat diet.

Living out of a car agreed with the young couple. As the days slipped into months we discovered by watching them that they had found probably the most practical and economical way of remaining on the desert where the warm sunshine and fresh air were definitely restoring Bunny's health. Their

diet may have been monotonous, but today most of us are spoiled, diet-wise, by too great a variety.

I remember the day a neighbor brought back a deer from the foothills of the San Bernadinos—the poor thing was a small scrawny animal, but nevertheless the call went out as usual to "Come on over, folks!" Everyone did, bringing whatever they had on hand to help swell the meal.

Bill and Bunny and Hector came too, of course. They brought a pan of pre-boiled whole wheat kernels mixed with pine nuts and a little butter and honey, worked into a pasty-mix and then baked to a crisp golden turn. It looked and tasted wonderfully appetizing, giving off a delicious aroma. I still make it upon occasion, and believe me, it sticks to the ribs!

And now those far-off days are 28 full long years past. Our first home-

stead is long gone, and the fortunes of most of us who lived in that corner of the Mojave during those lean yet happy days have changed for the better. But the lessons learned in laisser faire, generosity and thoughtfulness, and the friendships we made, are priceless.

Where else but on the desert could we have had that satisfying, contented and happy way to live?

LETTERS

Billboards and the Desert . . .

Long Beach, California

Desert:

The reprinted *Nature Magazine* editorial, "Outdoor Advertising and Public Relations," seems out of place in *Desert Magazine* (Nov., '57).

For 35 years I have been spending my spare time on the desert and have seen outdoor advertising grow as our towns expanded. These signs are confined to the highways, but the desert to me are those big beautiful places off of the highways that can only be reached by dirt roads and trails. What is to be gained by trying to keep the signs off the main highways?

C. C. MILLER

* * *
Chula Vista, California

Desert:

After reading the billboard editorial we wrote a note of appreciation to the Union Oil Company of California for its stand on this matter. We believe if everyone who read and agreed with this editorial would write a similar letter, the reaction to abolish billboard advertising would spread to other large organizations.

DR. and MRS. DEAN EWING

* * *
Worked with Burbank on Cacti . . .
Pasadena, California

Desert:

Eugene Conrotto's July '57 *Desert* story on Luther Burbank's spineless cacti experiments was of great interest to me for I worked for Burbank on this project in 1915.

The day he went through his cactus plantings and selected 20 pads as prime examples of what he was working toward, is clear in my mind. I carried those pads from the field and they were perfectly smooth and spineless. During the many years since, I often have wondered why more utilization has not been made of spineless cacti in the arid regions.

Burbank was a remarkable man.

He clearly foresaw the great growth awaiting the Pacific Coast, and even went beyond our own day to predict that when matters in the troubled Far East are settled, a tremendous market for Coast goods will be created. Perhaps today's search for government-guaranteed security is responsible for the lack of men like Burbank—men who would not hesitate to go to any amount of trouble and hard work to make a discovery they felt would benefit mankind.

ROY E. ARNETT

* * *

Visitors on the Roof . . .

Sparks, Nevada

Desert:

The December article on Gila woodpeckers and Mearn's gilded flickers was especially interesting to me because of the many enjoyable times I have spent observing these birds.

Before my house took on a new roof of asbestos shingles, winter flickers frequently hammered over the front door—and I have been fooled more than once thinking someone was knocking at the door.

CORDELIA WHITMORE

* * *

A Mule Impostor? . . .

Torrey, Utah

Desert:

The photograph on page 6 of the December *Desert* accompanying the article, "Burro Sanctuary on the Mojave," is of a mule—not a burro!

CHARLES KELLY

* * *

Packing Instruction for Scouts . . .

Ontario, California

Desert:

The response to my letter in the December *Desert* offering to teach the art of packing burros was overwhelming.

One of the many organizations which requested my services was the Boy Scouts of America—and I'm leaving for the Scout camp in the High Sierras early this year. The camp, visited on weekends by 400 to 2000 Scouts, has 30 burros.

L. W. MESCHER

Poison Taking Its Toll . . .

San Jacinto, California

Desert:

While the old folks' belief that prairie dogs, ground owls and rattlesnakes often live together peacefully in the same hole has long been disproved, I have seen evidence that these animals used the same hole.

Today, however, the rattlesnake may have all the holes to himself because of the increasing use of deadly 1080 and other poisons that induce secondary poisoning.

The ground owl most certainly has disappeared in many places since the use of such poisons began, and I am very fearful that we are now too late to save it from extinction. We should all work toward the enactment of legislation that will give relief from the present poison situation.

LESTER REED



"The Desert Gave Us a Way to Live" is Dorothy Robertson's true experience account of life on the Mojave during the Depression, and of it she writes:

"... perhaps the attitudes and the thinking of the handful of people we knew who were our likewise poor neighbors in those earlier depression days may prove helpful to others. Especially now, at the present time of high living costs and the threat of job-cutting, when people tend to become so easily and understandably frightened."

The Robertsons live in Ridgecrest, California, and the only relic they have of their Hesperia homestead is the old Model A auto, which their son has rebuilt twice and which their 15-year-old daughter is hoping to take over in a year's time.

Here and There on the Desert . . .

ARIZONA

Few Papagos on Reservation . . .

SELLS — Approximately 7000 of the slightly more than 11,000 Papago Indians now live more or less permanently off the reservation. An estimated 1000 tribesmen live in Tucson and the bulk of the remainder are in rural and suburban areas seeking a living their reservation will not provide. For many decades the Papago has been leaving his reservation for seasonal farm work. Apparently the Indians are staying away for longer and longer periods of time. Mark Manuel, chairman of the Papago Tribal Council, said, "our old way of life has practically disappeared. Education must fit us to compete." —*Phoenix Gazette*

Telescope May Be Moved . . .

FLAGSTAFF — Better weather conditions in the Southwest may bring about the transfer of the famed "Big Eye" telescope at Ohio Wesleyan University's Perkins Observatory to the Lowell Observatory at Flagstaff. The 69-inch reflector-type instrument is the largest telescope east of the Mississippi River. —*Phoenix Gazette*

Road Fund Halt Asked . . .

WINDOW ROCK — The Navajo Tribal Council has requested the Federal government to withhold all highway funds from Arizona until the state "assumes a reasonable share of responsibility" for reservation roads. Council Chairman Paul Jones said the state's argument that because Indian land is tax exempt the state has no responsibilities to the Indians was unsound. "We have no exemptions from automobile and gasoline taxes," he pointed out. —*Phoenix Gazette*

* * *

Solar Home Being Built . . .

PHOENIX — Construction was underway on the Association for Applied Solar Energy's prize-winning home, with completion scheduled for March. Architect Peter R. Lee of Minneapolis, winner of the Association's recently held international competition, designed a house which will be both heated and cooled by solar energy. Solar rays are trapped by an extensive series of mobile blinds, electronically controlled to move with the sun and adjust to seasons. —*Phoenix Gazette*

Rising Colorado Causes Damage

SAN LUIS, Sonora — The slowly rising Colorado River had inundated about a dozen dwellings near San Luis by the first of December with more damage threatened daily. In danger was the pontoon bridge that is the only connecting link between San Luis and Mexicali. Cause of the disaster is the fact that a steady release of water has been ordered at Hoover Dam where the level of Lake Mead was becoming dangerously high. The lake level must be kept below capacity in order to safely receive the spring runoff. Otherwise, the water would have to be let loose in one large amount which might cause untold damage downstream. —*Yuma Sun*

Indians Seek Independence . . .

PARKER — The Colorado River Indian Tribe has asked for Federal government cooperation on a long range plan which is intended to ultimately lead to the tribe's independence. Five main points of the Indians' plan were: 1. Cancellation of the lease with Colorado River Enterprises (Stanford W. Barton) for non-performance; 2. Management talent will be hired from a banking or trust institution; 3. The tribe will ask Congress to confer full title of reservation lands to the Indians; 4. Gradual termination of services on

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PLENTY OF PARKING SPACE — TRAM SERVICE FROM PARKING AREA

the reservation by the U. S. Bureau of Indian Affairs will be requested; and 5. A tax moratorium will be sought in order to prevent overtaxing of lands until they become productive.—*Yuma Sun*

Fund Drive for USS Arizona . . .

PHOENIX — Public and military concern over the "rusting tomb" that is the USS Arizona has resulted in the start of a campaign for funds to build a suitable memorial over the sunken

battleship now lying in Pearl Harbor. Fund goal is \$500,000, estimated as the approximate cost of encasing and outlining the hull with steel and concrete, since it has been declared impossible to raise the rapidly deteriorating vessel. The Arizona went down Dec. 7, 1941, with 1102 men. Contributions can be addressed to USS Arizona Memorial, Pearl Harbor, Hawaii.—*Phoenix Gazette*

TRUE OR FALSE ANSWERS

Questions are on page 12

- 1—False. Tarantula is comparatively harmless.
- 2—False. White ocotillo is very rare.
- 3—True.
- 4—False. The cliff dwellings were all abandoned long ago.
- 5—True.
- 6—False. Brigham Young and the Mormon colonists started the trek to Utah in 1846.
- 7—False. An arrastre was for grinding ore.
- 8—True. 9—True. 10—True.
- 11—False. The Seven Cities of Cibola were in New Mexico.
- 12—True. 13—True.
- 14—False. El Tovar is at Grand Canyon.
- 15—True. 16—True.
- 17—False. Quartz is harder than calcite.
- 18—False. Pictographs were painted, petroglyphs were incised in the rocks.
- 19—False. Tuba City is in Arizona.
- 20—True.

CALIFORNIA

Salton Sea Level Drops . . .

SALTON SEA—The water surface elevation of the Salton Sea has dropped .15 of a foot during the last year, the Imperial Irrigation District announced. The inland sea's level at the latest reading was 234.6 feet below sea level. On August 31, 1956, its level was minus 234.45 feet.—*Coachella Valley Sun*

Joshua Monument Road Denied . . .

TWENTYNINE PALMS—The National Park Service has turned down the latest bid for a fast highway through Joshua Tree National Monument. The proposal, which came from the Riverside County Supervisors, asked that further study be made on the Blue Cut route from Coachella Valley through 20 miles of the monument. The road is described as an "east-west route between Los Angeles and Las Vegas."—*Desert Trail*

Sheep Water Supply Is Low . . .

TWENTYNINE PALMS—Surveys place the bighorn sheep population of Joshua Tree National Monument at 102, far less than the estimated 125 to 250 animals in the monument made prior to the surveys. Park officials blame the water situation for the decrease. Numerous wells and springs have dried up during the past 15 years, but plans have been made to develop the flow of Stubby Springs, the Long Canyon seep and the spring in Lost Palms Canyon. The National Park Service is acquiring a well on the Stokes property south of Joshua Tree which it hopes to utilize for the sheep.—*Desert Trail*

Salton Sea Facilities Expanded . . .

SALTON SEA STATE PARK — Additional facilities, including boat services and rentals, now are being offered at Salton Sea State Park by Richard L. Sinclair, who recently was awarded concession privileges at the park. In addition to speedboat pleasure cruises, Sinclair has gas and oil for sale, and rowboats, water skis, outboard motors, ski ropes and life belts for rent.—*Coachella Valley Sun*

State Indian League Formed . . .

SAN FRANCISCO — Recently organized was the California League for American Indians, whose function it will be to deal with problems arising from ending Federal control over Cali-



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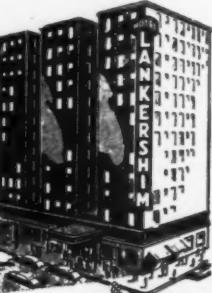
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fornia's 114 Indian reservations, and the influx of large numbers of Indians from the Southwest and plain states into the state. In addition, the League will attempt to stimulate scholarships for young Indians; sponsor Indian art and handcraft exhibits; and sponsor conferences of Indians, officials and the public. The League's address is Room 1030, 300 Montgomery Street, San Francisco.—*Inyo Independent*

• • •
Cibola Bridge Called Hazard . . .

BLYTHE — The controversial Cibola Bridge was declared a navigational barrier and river flood control impediment by Bureau of Reclamation Regional Director Wade H. Taylor of Boulder City, Nevada. The bridge, built by Arizona farmers without Federal approval to facilitate movement of their products over the Colorado River to California markets, could cause the flooding of the Palo Verde or Cibola valleys, Taylor said. If debris is allowed to collect at the bridge the river could be diverted. Taylor said that a river flow of 25,000 cubic feet per second would put the bridge deck 1.5 feet under water. — *Palo Verde Valley Times*

• • •
NEVADA

Old Hotel May Be Converted . . .

GOLDFIELD — The state is investigating the possibilities of whether the historic Goldfield Hotel might be adaptable either as a sanitarium or a school for juvenile delinquent girls. The hotel, closed for 20 years, was one of the finest hosteries of its day and has since become a landmark. — *Nevada State Journal*

• • •
Nearly 18,000 Deer Killed . . .

CARSON CITY — Latest deer kill figures for Nevada's 1957 season, still uncompleted at the time, was 17,722. Elko County alone accounted for 10,462 of this number. Fish and Game officials said 1957's deer harvest would probably fall short of 1956's. — *Nevada State Journal*

• • •
RENO — Dr. Vincent P. Gianella, professor emeritus of the Mackay School of Mines, University of Nevada, was elected president of the newly organized Geological Society of Nevada. The group was organized to review current geological literature, and to discuss research developments. — *Nevada State Journal*

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Hoover Power at Capacity . . .

BOULDER CITY — After four drouth years during which power generation at Hoover Dam was cut to as low as 62.75 percent of firm output, Lake Mead again is up and power allottees are receiving 100 percent of energy allotted to them by original contracts. Lake Mead, whose maximum elevation (reached only once for observational purposes) is 1220 feet, rose to 1184 feet last fall. — *Pioche Record*

• • •
Valley of Fire Developing . . .

LAS VEGAS — A program for the future development of Clark County's Valley of Fire State Park is proceeding satisfactorily, the State Park Commission announced. In addition to road improvements, a new camping and picnic ground has been established, and more of these facilities are planned. — *Nevada State Journal*

• • •
State Seeks Geysers for Park . . .

BEOWAWE — Initial steps were taken by the State Park Commission to bring the Beowawe Geysers (*Desert*, Jan. '56) into the state park system. Geologists claim that the geysers are the second most active in this nation and possibly the hemisphere. — *Eureka Sentinel*

• • •
NEW MEXICO

Indian Church Assails Officials . . .

GALLUP — Officers of the Native American Church, a Christian sect embodying Western Indians of many tribes, criticized New Mexico Governor Ed Mechem and Senator Dennis Chavez. Mechem was accused of "double-crossing" the group in his veto of a measure which would have legalized the use of peyote, a stimulant drug made from mescal buttons and used for sacramental purposes by the church. Chavez was taken to task for his efforts to outlaw the use of peyote on a national level. The Native American Church plans to oppose both men in this year's elections. — Will Harrison in the *New Mexican*



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Dam Fund Battle Seen . . .

SANTA FE—New Mexico Congressional leaders promise to fight any attempt to prevent the allocation of money for the Navajo Dam of the Upper Colorado River Reclamation Project in this year's budget. Increased defense spending may crowd out the Navajo project, they fear.—*New Mexican*

Lagunas Building Meeting Hall . . .

LAGUNA—Under construction in the Laguna village, 35 miles east of Grants, is a \$143,800 community meeting hall. The project marks the first use by the Indians of the millions of dollars received as royalties for uranium ore mined by the Anaconda Co. at the Jackpile Mine. Completion date is set for March 1. — *Grants Beacon*

• • • Indian Arts-Crafts Threatened . . .

SANTO DOMINGO PUEBLO—A movement to throw out a new state arts and crafts law was assailed by Ned Hatathli, chairman of the Navajo Tribal Resources Committee, in an address before the All-Pueblo Council. The law requires that all machine-made "Indian" work be so labeled. Hatathli told the Pueblo leaders that the market is being flooded with machine-made imitations of Indian handicrafts, and in some instances craftsmen other than Indians are copying or using Indian designs on their products, thus making it very confusing to the buying public. Hatathli fears an organized effort is being made in New Mexico, backed by "powerful interests," to challenge the constitutionality of the law.—*New Mexican*

Range in Good Condition . . .

LAS CRUCES — New Mexico's range feed supply was the best it has been since 1949 and the outlook for early spring forage is excellent, the Agriculture Department said. Hay and feed supplies are ample, stock tanks are full, and the range condition is 83 percent of normal, compared with 76 percent for the 10-year average. — *New Mexican*

Indian Leaders Map Program . . .

WASHINGTON, D. C.—A sweeping program for increased political activity among Indians, reservation law enforcement, community recreation, tribal recognition of youth problems and increased funds to encourage higher education was unanimously proposed by leaders of 30 of the nation's Indian tribes. The action climaxed the first national conference on the problems of Indian youth, and the delegates voted to hold a second forum next year. — *Grants Beacon*



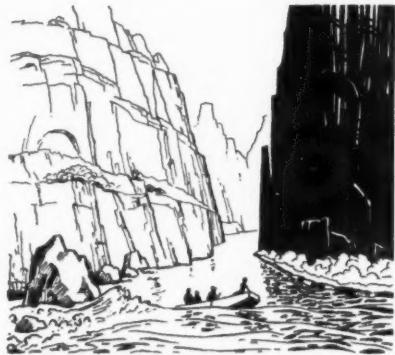
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Highway Paving Goal Set . . .

SANTA FE—New Mexico has set a goal of paving an additional 1500 miles of highways by 1975. At present the state has 7200 miles of paved roads. New Mexico's three interstate highways, U.S. 66, 85, and 80, should be converted to divided four-lane routes with controlled access during the target period, but some cutback may have to be made in other programs unless additional funds are found, a Highway Department spokesman said.—*New Mexican*

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Indians Can Keep Lands . . .

WASHINGTON, D. C.—Termination of Federal trusteeship over the lands of a particular Indian tribe does not mean the tribal lands must be sold off by the government, and the tribal organization no longer permitted to exist, Indian Commissioner Glenn L. Emmons said. Indians will be allowed to continue to maintain their tribal organizations and hold their lands in common for as long as they wish after termination, he added by way of refuting what he called widespread misinformation among Indians and the public on this matter. All termination laws so far enacted have contained explicit

provisions authorizing the affected Indians to continue holding their lands in common through the formation of a corporation or similar organization, or through selection by the tribe of a non-governmental trustee.—*New Mexican*

• • • UTAH

Dead Horse Point Park Urged . . .

MOAB — Gov. George Clyde expressed hope that a plan could be worked out with the Bureau of Land Management for transfer to the state of Utah of about 1000 acres near the confluence of the Green and Colorado rivers, south of Moab, for state park purposes. The governor and several other officials recently surveyed the Dead Horse Point, Upheaval Dome and Grandview Point area. Clyde said revenues coming into the state from oil and gas exploration and development could well be put to use in developing the potentials in scenic areas of the state such as the Dead Horse Point region.

• • •

Basin States Split on Dam . . .

GLEN CANYON DAM — A demand by California, Nevada and Arizona that the government recognize the right of the Lower Colorado River Basin to use of the river's water as superior to the government's right to fill the Glen Canyon reservoir; and that the United States not impair Hoover Dam power output by filling and operating the Glen reservoir, was rejected by the Department of Interior and Colorado, New Mexico, Utah and Wyoming. The Department said such

a demand would place the burden of regulating the flow of the Colorado River for consumptive downstream use on Glen Canyon as long as any usable water is in Glen Canyon Reservoir. The lower basin states have formed a legal committee to carry their fight directly to Congress, with a possible attempt to block any further appropriations for the construction of the dam.—*Phoenix Gazette*

• • • River Project Faces Threat . . .

VERNAL — The Russian Sputnik may have dealt a heavy blow to the start of the Vernal Project and to appropriations for the Upper Colorado River Project, said State Senator B. H. Stringham. Cutting of public works funds is considered likely in Washington as huge outlays are sought for U.S. missile development. However, if there are funds enough to start a few new reclamation projects, one of them is expected to be the Vernal Unit (Steinaker Reservoir). — *Vernal Express*

• • • Chaffin Ferry Sinks . . .

HITE—High waters rushing down the Colorado River sank the Chaffin ferryboat. No one was on the vessel at the time. The ferry, inactivated last summer when floods tore out the drive cable, had been operated by Mrs. Redd Maxfield since the death of her husband by accidental drowning in the river last April.—*Salt Lake Tribune*

• • • Museum Drive Launched . . .

MOAB — The local Literary Club has tackled the job of raising funds for the establishment of a long sought after museum for the valley. Already in storage are enough relics of interest to furnish a sizeable museum—and the club members hope to supply the physical plant to house these displays. — *Times-Independent*

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MINES and MINING

OIL LEASES ADD \$8,070,572 TO NAVAJO FUNDS

WINDOW ROCK, ARIZONA — Gas and oil leases on 6534 acres of Navajo Reservation land have added \$8,070,572 to the tribal treasury. It was the highest bid average on record, and Tribal Council Chairman Paul Jones declared it was far above expectations. He said more tribal land would be leased on schedule early this year.

Largest single bid came from Carter Oil Company of Tulsa, Oklahoma, which paid \$1,034,040 for 240 acres in southeastern Utah. The bidders also leased 1040 acres of Indian allotted land off the reservation, owned by private individuals.

The Texas Company was the top bidder for tribal land, offering \$4,261,438 for 11 of 33 tracts offered. The lease sale schedule calls for leasing 167,500 acres on January 15; 119,700 acres February 11; and 87,900 acres March 19.—*New Mexican*

Four Corners Region . . .

Scheduled for completion in February is the Four Corners Pipe Line. The 750-mile system will transport crude oil from a point in Southern Utah to Los Angeles refineries. The overhead crossing of the Little Colorado River at Cameron, Arizona, was finished, and the underwater crossing of the Colorado near Needles, California, nearing completion at year's end. Crude oil from fields in both Utah and New Mexico was placed in the line in November. The 1,020,000 barrels of oil were required to fill gathering lines, the trunk line and working storage. Line fill is continuing on an intermittent basis as oil is needed to displace water used in testing each completed section of the line. Shell Pipe Line Corporation will operate the line as agent for the several major oil companies which own it.—*Desert Trail*



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Salt Lake City . . .

Kennecott Copper Corporation reduced its work force by 900 employees and production by 12 percent in January. In cutting output at Utah Copper, Nevada Mines and Chino (New Mexico) divisions, Kennecott placed those units on a six-day week instead of seven. The company, with 11,000 employees in the four western states, released 525 men from its Utah operation; 180 from Nevada; and 182 from New Mexico.—*Salt Lake Tribune*

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El Dorado Canyon, Nevada . . .

Congo Uranium Company has started operations on the Oro Plata silver mine in El Dorado Canyon, Clark County, on which it holds a long-term lease. The ore assays 40 ounces of silver and .19 ounces of gold to the ton. Work on the mine, which had been idle since 1937, is being performed underground. —
Pioche Record

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San Juan County, Utah . . .

El Paso Natural Gas Company has asked the Federal Power Commission for approval of its plans for a \$26,000,000 pipeline and natural gasoline plant expansion in San Juan County. El Paso Natural Gas said it wanted to build facilities south of the San Juan River in the Desert Creek area, as a center for gathering, processing and delivering into its California-bound transmission systems some 115,000,000 cubic feet of gas daily.—*Salt Lake Tribune*

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Grants, New Mexico . . .

Reduction in exploration for and development of uranium ore reserves is planned by a number of major operators who give as their reason the fact that they do not see any chance of getting new reserves into mills because of the announced limitation on concentrate purchasing by the Atomic Energy Commission. A Phillips Petroleum Company spokesman predicted that 90 percent of all exploration for uranium by major companies will end shortly. Lucky Mac Uranium Corporation reportedly has developed enough ore to more than supply present mill requirements.—*Pioche Record*

Salt Lake City . . .

The American petroleum industry will expand somewhat more in exploration and development during this year than it did in 1957, predicted Kenneth E. Hill, vice president and head of the oil department of the Chase Manhattan Bank of New York City. The petroleum engineer told members of the Intermountain Association of Petroleum Geologists that the Rocky Mountain Area is one of the youngest and more attractive areas of the United States in the search for new oil reserves.—*Salt Lake Tribune*

• • •

Henderson, Nevada . . .

Two hundred production and maintenance employees were laid off their jobs at Titanium Metals Corporation of America's Henderson plant. The December layoff was the third cut necessitated by the cancellation of government contracts with the aircraft industries. A company official said the defense budget cut has virtually halted all progress on TMCA's previously announced \$15,000,000 expansion plans. Over 90 percent of the titanium industry's total production is utilized in defense manufacturing.—*Pioche Record*

• • •

Salt Lake City . . .

The greatest wildcat drilling boom for oil and gas in the history of Utah is in prospect this year. Over 110 wildcat projects, seeking production where none now exists, have been scheduled by operators presently in the field in the state. Estimated cost of these wells is \$20,000,000. This risk-taking venture does not include the projected field development at 30 presently existing oil and gas fields in Utah. Over 300 wells alone have yet to be drilled at Aneth Field on an 80-acre pattern. The Paradox Basin is expected to receive the bulk of the wildcat ventures.—*Salt Lake Tribune*

• • •

Ruth, Nevada . . .

Closing of the observation point overlooking the huge Liberty Pit was announced by Kennecott Copper Corporation. The popular tourist attraction had to be vacated because of stripping operations now underway, the company said. When the work is completed the company plans to give serious consideration to the establishment of a new observation point.—*Ely Record*



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AMATEUR GEM CUTTER

By DR. H. C. DAKE, Editor of *The Mineralogist*

Perhaps most of us have been under the impression that the acicular needles of rutile seen growing in crystal quartz are firmly cemented or locked to the silica. Such, however, does not seem to be the case, at least not with specimens from Brazil.

Recently, a commercial gem cutter of Portland, Oregon, made the observation while grinding large quantities of rutilated quartz for cabochon gem stones, that about half of the needles would "shake out." In grinding down specimens on the lapidary wheels, the vibration would cause needles of rutile to work out on the surface of the specimen, protruding for an inch or more before breaking off. A circular "tube" would remain where a needle was wholly or partially lost. The fact that many of the needles of the rutile are actually loose within the quartz seems a mineralogical curiosity. Perhaps a very slight shrinking of the silica gel upon solidifying accounts for the phenomenon.

* * *

Diaphaneity is defined as a degree of transparency or the amount of light which passes through a solid. The degrees, in the power of transmitted light, are expressed as follows: Transparency, when the outlines of an object are clearly seen through the material; diamond and clear quartz. Semitransparency, the outlines of the object can be indistinctly seen; colored beryl. Translucency, light is transmitted but the object cannot be distinguished; prase and citrine. Subtransparency, when only the thin edges transmit light; dark colored garnets. Opaque, no light is transmitted; jasper and hematite.

Luster depends upon the manner in which the light is reflected from the surface, in distinction, color is dependent upon the kind of light reflected. Luster may be called brilliancy or shine.

The following kinds of luster are recognized: Metallic, the luster of metals such as gold, copper, tin and iron. Non-metallic, opposite of metallic and is subdivided into the following classes: Adamantine, the luster of diamond; cerussite also has this luster. Only minerals possessing a highly refractive index have an adamantine luster. Vitreous, the luster of broken glass and of quartz crystals. Subvitreous, an imperfect vitreous luster such as calcite. Resinous, the illustration of yellow resin, illustrated by some opals and some yellow varieties of sphalerite. Greasy, the luster of oily glass. Naphelite has this luster.

Pearly, like pearls, foliated talc, brucite and stilbite. Pearly luster is due to the light reflected from a pile of thin plates. Silky, the luster of silk, is the luster of a fibrous structure. The luster of satin spar, a variety of fibrous calcite or gypsum. Dull, lacking in luster. Kaoline, chalk and the ochres are good examples.

There are various degrees of luster: Splendid, reflecting with great brilliancy, and giving a well-defined image. Shining, producing an image but not well defined. Glistering, affording a general reflection apparently from points such as chalcedony.

* * *

Few home gem cutters realize that like any other lapidary tool, the felt buff requires some care and attention. A buff wheel may become contaminated with grits and scratching occurs when polishing.

One method to dress the wheel is to use a large lump of pumice stone against the revolving buff. It will remove any contaminating grits which may have become

lodged on the surface of the felt wheel, and large lumps of crude pumice stone are inexpensive.

The pumice should be held firmly against the felt wheel, while it is in motion. A lump large enough to be gripped securely by the fingers works best. While free hand dressing can be done, a rigid rest for the dressing tool while being pressed against the buff will prove most satisfactory.

In buffing down metal jewelry work, prior to the final polishing, a felt buff may become "glazed" on the surface, and not give proper results. A light dressing with pumice, to bring out a new fresh surface will permit faster and better work. The great advantage of pumice is that it works quickly and removes only a very thin surface from the buff, where a metal dressing tool, like a file, will remove considerably more felt than is indicated. Lump pumice is available from most lapidary supply houses.

* * *

Waterworn pebbles are sometimes confused with gastroliths—stones once swallowed by a dinosaur. While there is no specific method of identifying dinosaur gizzard stones they are as a rule more highly polished than water worn pebbles. The gastroliths vary in size from quite small up to about four inches in diameter. Curiously enough the gastroliths are often bright colored pebbles of some quartz mineral; seemingly the dinosaur of Lower Cretaceous and Jurassic was attracted by bright colored objects in the same manner as the present day barn yard fowl will promptly snap up a bright colored fragment of glass as an aid to digestion.

An almost certain indication of authenticity is when the "gizzard" stones are found associated with fossil dinosaur bones. In some parts of Wyoming the extensive sedimentary beds are wholly devoid of pebbles of any kind, hence when a number of highly polished stones of assorted sizes are found with fossil dinosaur bones there can be little if any question regarding their origin and authenticity. Hence the matter appears to be one of occurrence rather than any inherent physical quality of the specimen.

* * *

In the modern appraisal of the color and value of a diamond, it is customary to examine the stone in good unobstructed daylight, usually from the north. Gem trader Tavernier (1645) in his magnificent writings made reference to this technique used in Europe. He calls attention to the following method in use in India.

"The Indians do all that in the night-time, setting up a lamp with a large wick, in a hole which they make in a wall, about a foot square; by the light whereof they judge of the water and clearness of the stone, which they hold between their fingers."

This is most interesting, for it is well known that a diamond viewed in a dark room, under the light of a single candle light, will reveal the stone best in all its flashing glory. By the light of a camp fire,

the diamond will also show at its best. Out in bright direct sunlight, the diamond is presented under the worst conditions. This is just the opposite of opal. Under candle light or any artificial light, opal is not well presented, but under direct sunlight, opal stands best revealed.

Tavernier further tells us that the color which was called "celestial," at that time in India, was not well regarded. This is the modern "blue" so highly regarded now. He tells us that if the stone is to be judged in daylight it should be examined under the shade of a tree with thick foliage. It is stated that under these conditions the bluish "water" will be readily revealed if present.

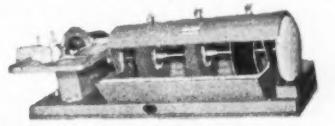
When Tavernier first visited the Golconda diamond mining region in India, in the early 1600s, he reports there were some 60,000 persons employed, including men, women, and children. The men did the digging while the women and children carried the dug material to be spread out to dry, where it was then treated to recover the gem.

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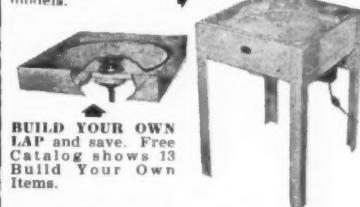
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GEMS AND MINERALS

Bulletin Editors' Seminar Planned by Desert Magazine

Desert Magazine will be host at an open house-seminar-barbecue for the 55 gem and mineral society bulletin editors of the Desert Southwest on Saturday, February 15. The affair is being presented in cooperation with the Bulletin Editors' Association and the Shadow Mountain Gem and Mineral Society.

The February 15 date was chosen so that the visiting editors will be able to take advantage of the 1958 Riverside County Fair and National Date Festival at nearby Indio.

UTAH COLLEGE RECEIVES PRIZED ROCK COLLECTION

Noting that Utah, a state rich in geological history and minerals from a myriad of mines and unexploited areas, has relatively few good collections of minerals and rocks in public institutions, Mr. and Mrs. Charles W. Lockerbis of Salt Lake City recently donated part of their outstanding collection to Westminster College.

Included in the gift were 1100 specimens, some beautifully cut and polished. Consolidated Eureka Mining Company and the Rico Argentine Mining Company donated lighted display cases, costing \$1100, to house the exhibit.

The Lockerbises, who have accumulated 30 representative collections of rock through the years, plan to donate more specimens to Westminster as rapidly as display cases are provided.—*Salt Lake Tribune*

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which runs from Feb. 14 to 23 this year. One of Southern California's most outstanding gem and mineral shows is a feature of the Festival.

The gem bulletin editors will meet at the *Desert Magazine* Pueblo in Palm Desert at 1 p.m. and the open house-seminar is expected to last three hours. Mrs. Vivienne M. Dosse, editor-in-chief of the editors' association, will officiate over a portion of the meeting.

Then the guests will leave by convoy for a camping site in one of the adjacent desert canyons where a barbecue dinner will be served by the Shadow Mountain Gem and Mineral Society's chuckwagon crew, headed by club president Herb Ovits.

"Purpose of this program is not only to introduce representatives of local gem and mineral societies to the *Desert Magazine* operation; but to pay tribute to the outstanding job these editors are doing in publicizing the nation-wide rockhound movement," declared *Desert's* associate editor Eugene Conrotto, chairman of the Feb. 15 affair.

• • • SOFTER STONES CAN BE CUT WITH CARBORUNDUM WHEEL

An inexpensive way to cut alabaster and similar soft material is to use a carborundum cut off wheel (used to cut steel bars and pipe). Operate as you would a regular rock saw.

Some carborundum wheels are as thin as diamond saw blades, while the thicker ones find use in the cutting of bookends, etc., where the lapidary can afford to waste material that is not of great value.

The operator should be careful not to allow side pressure on the blade or it will snap. Carborundum blades should be well shielded for they shatter when they break.—Ventura, California, Gem and Mineral Society's Rockhound Rambling

TWO SHOWS SCHEDULED FOR ARIZONA FIESTA

Opening event of the Arizona Gem and Mineral Fiesta will be the Fourth Annual Tucson Gem and Mineral Society Show at the Pima County Fairgrounds, February 28-March 2.

On the following weekend, March 7-9, activities shift to Phoenix where the third annual Gem and Mineral Show takes place in conjunction with the annual convention of the Rocky Mountain Federation of Mineralogical Societies. Theme of the Phoenix show is "Jewels of the Ancients."

Field trips to collecting areas are scheduled during the week between shows.

TOPAZ DEPOSITS WIDELY SCATTERED IN U.S.

Topaz, usually found in pegmatite dikes and cavities in granite, is a transparent gem of many colors. These include colorless, blue, pinkish shades of yellow and pale brown. Most prized are the reddish-pink and wine yellow stones. Natural reddish-pink stones are very rare and much of this color is by application of heat, usually on certain brownish topaz from Brazil.

The United States produces topaz in widely separated states. California has both blue and yellow varieties; Utah yields sherry-brown and colorless stones; a new discovery was reported in 1955 in New Hampshire; Light blue topaz is mined in Mason and Tuleo counties, Texas. Colorado and Maine also produce this gem.

One of the hardest of the semi-precious gems, topaz has a hardness of 8 on Mohs' scale.—Elsie White in the *Gem Cutters News*

• • • TURQUOISE COLOR IMPROVED WITH "BEAUTY BATHS"

For many years various beauty bath methods have been used to improve the color of turquoise. In order to liven up these washed-out colors, waxing and boiling in paraffin oil has been in common use.

Aniline dyes also have been used to improve the color, and more recently, soaking the inferior material in a suitable plastic has been practiced. The plastic is used mainly to give the material better mechanical strength, and a glossy effect.

The dye will color the matrix as well as the turquoise, hence any material that shows the color in the matrix may be put down as having passed through a beauty bath.—Miami Mineralogical and Lapidary Guild's *The Geode*

PRE-HISTORIC STYLE ARROWHEAD JEWELRY OF SYNTHETIC GEMSTONE

Arrowheads mounted in thunderbird fittings. All metal parts non-tarnish rhodium finish.

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Clear colors: xl, pink, xl, smoke, amethyst.

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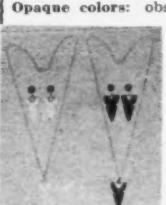
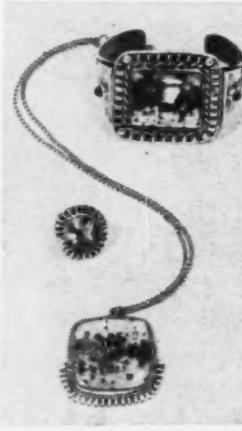
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Gem Clubs Name New Officers

Don Javes was elected president of the Bellflower, California, Gem and Mineral Society. Serving with him will be Art Bruhns, vice president; Celia Ganz, secretary; and Al Kramm, treasurer.—*Bell Notes*

* * *

New officers of the San Gorgonio Mineral and Gem Society of Banning, California, are: Linnie Adrian, president; Joe Saruwatari, first vice president; Dick Gilmore, second vice president; Frank Schockey, secretary-treasurer; B. E. Hansen, custodian; and F. C. Herfurth, bulletin editor.—*Pick 'n Shovel*

A. L. Fraser of Eureka, California, was elected president of the local Humboldt Gem and Mineral Society. Serving with him will be Charles Langdon, vice president; Agnes Nelson, secretary; L. B. Roscoe, treasurer; and Kae Pettengill, librarian.

* * *

New officers of the Downey, California, Delvers Gem and Mineral Society are Paul Whitney, president; Owen Kent, first vice president; Barry Smith, second vice president; Paul Walker, third vice president; Iris Timson, secretary; John Vincent, treasurer; Rip Mosher and Ed Flutot, editors; Ralph Stinson, Sam Best, John Ellenberger and Harry Anderson, directors.—*Delvings*

* * *

Hilton Stang was elected president of the San Fernando Valley, California, Mineral and Gem Society. Serving with him will be Lou White, vice president; Gwenda Blazer, secretary; and Trav Bergman, treasurer.—*Rocks and Gems*

New officers of the Glendale, California, Lapidary and Gem Club are Ellis Roth, president; Art Bowman, first vice president; Vic Martin, second vice president; W. D. Gordon, treasurer; and Margaret Sullivan, secretary.—*Glendale Gems*

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TURQUOISE FOR SALE. Turquoise in the rough priced at from \$5 to \$50 a pound. Royal Blue Mines Co., Tonopah, Nevada.

COLORADO MINERAL specimens, cutting and tumbling materials. Send 2 cent stamp for list and terms. Dealers please write for wholesale list. John Patrick, Idaho Springs, Colorado.

WOOD, JASPER and chert. Good sawing and tumbler rock, 25c per pound. All very good colors. All shipments guaranteed. Shipped C.O.D. Claude Simonds, Hanksville, Utah.

OPALS, DEEP red, blue, green, golden, flashing in all colors of the rainbow, direct from the mine, 15 for \$5.00. 10 ringsize stones, (opal, amethyst, etc.) ground and polished, ready to set \$5.00. Kendall, Sanmiguel d'Allende, Guanajuato, Mexico.

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GENUINE TURQUOISE: Natural color, blue and bluish green, cut and polished Cabochons — 25 carats (5 to 10 stones according to size) \$3.50 including tax, postpaid in U.S.A. Package 50 carats (10 to 20 cabochons) \$6.15 including tax, postpaid in U.S.A. Elliott Gem & Mineral Shop, 235 E. Seaside Blvd., Long Beach 2, California.

QUEEN OF baroques—highly polished desert roses (chalcedony), $\frac{1}{4}$ to 1". \$4.00 pound. Singles, 25c to \$1. Dealers inquire. C. Earl Napier, Box 153, Boulder City, Nevada.

LARGE VARIETY mixed tumbled stones —Tigereye, agates, obsidian, palm root, quartz. 40-60 stones in pound—only \$4. Free: matched preforms with every pound purchased. Cash or money orders, tax paid. Sid's Originals, Route 1, Box 369, Beaumont, California.

OPALS AND SAPPHIRES direct from Australia. Special — this month's best buy: faced (top surface polished) solid black and dark gray opals. 6 stones weighing over 20 carats. Airmailed for \$15. Send personal check, international money order, bank draft. Free 16 page list of all Australian Gemstones. Australian Gem Trading Co., 49 Elizabeth Street, Melbourne, Australia.

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NOTICE ROCKHOUNDS! — Hand-forged one piece polished steel prospecting picks, \$4 each postpaid in U.S.A. Ray Flarty, Box 160, Nederland, Colorado.

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12 POUNDS OF beautiful Colorado mineral specimens, \$8.00 prepaid. Ask for list of others. Jack the Rockhound, P.O. Box 245, Carbondale, Colorado.

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MISCELLANEOUS

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EARWIRES—Half ball with split drop. Nickel or gilt	6 pr. for 30c	12 pr. for 55c
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EARCLIPS—Cup for cementing. Nickel plate	6 pr. for 55c	12 pr. for 90c
SWEATER GUARDS—2 clips with $\frac{1}{8}$ -inch discs complete with chain.	3 sets for \$1.75	6 sets for \$3.35
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BRACELETS—Rhodium plate. Med. link. Complete. 8-inches	6 for \$1.35	12 for \$2.30
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LEATHERETTE CORDS—Brown, black, tan, gray, dark blue	6 for \$1.20	12 for \$2.00
RAYON CORDS—Black, tan, brown/gold combination	6 for 45c	12 for 75c
CUFF LINKS—10 mm. cup for cementing. Nickel plate	3 pr. for 60c	6 pr. for \$1.00
CUFF LINKS—15 mm. disc for cementing. Rhodium plate	3 pr. for 85c	6 pr. for \$1.50
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The Emmett, Idaho, Gem Rock and Mineral Society elected its first woman president. She is Mrs. Earl Kent, and serving with her will be Emmett Thomas, vice president; Alice Vanderford, secretary; Mrs. Floyd Spence, treasurer; Mrs. M. R. Curtis, publicity director; and Earl Kent, federation director.

* * *

Hi Wellman was elected president of the Southern Siskiyou Gem and Mineral Society of McCloud, California. Also named to office were: Bill Dragoo, vice president; Irene Correa, secretary-treasurer; and Norman Norris and Paul Pongsegrow, directors.—*Siskiyou Gem*

* * *

The Mojave Desert Gem and Mineral Society of Barstow, California, elected the following new officers: Dan Ryan, president; Dot Klein, vice president; Peggy Robinson, secretary-treasurer; and Al Blackwell, Jack Klein, Alta Langworthy, Bill Robinson and Vince Wood, directors.

* * *

OPAL IS STONE OF RARE AND OUTSTANDING BEAUTY

Opal is the one gem stone that has not been successfully imitated. Considering the qualities that give gems value—outstanding beauty, sufficient hardness to retain this beauty, rarity—precious opal would be the most sought after stone in the world, were it not for its frailty. Opal is brittle and fractures under adverse conditions. Because of its relatively high water content, opals that are kept in dry storage often crack. A thin coating of olive oil or submerging the stone in glycerine or water will help preserve it.

Opal is hydrated silica with a hardness of 5.5 to 6. It is milky or white with internal play of rainbow colors in the more common species. The rarest and most valuable opals are the black varieties, mined only in Australia.—*Gem Cutters News*

* * *

RARE MINERAL FOUND IN SOUTHERN CALIFORNIA

A rare mineral has been found in California near Ramona, San Diego County. It is hambergite, a beryllium borate collected as mere grayish-white slivers to two inches in length, and appearing somewhat like feldspar. Only other places where hambergite has been found are in Madagascar, Kashmir and Scandinavia.—*Mineral Lore*

NORTHWEST FEDERATION ANNOUNCES SHOW DATES

The Northwest Federation of Mineralogical Societies announced that its 18th Annual Gem and Mineral Show and Convention are scheduled for August 30-September 1 at the Pasco, Washington, High School Gymnasium. Host society is the Lakeside Gem and Mineral Club of Kennewick and Pasco.

The Federation, with 100 active societies and a membership of over 6000, has urged dealers to make their space reservations early by writing to Darrell R. Irwin, 381 Chase Avenue, Walla Walla, Washington.

* * *

PURIFIED TITANIA MORE BRILLIANT THAN DIAMOND

Titania is a natural mineral that has been purified and recrystallized in the laboratory. The result is a gem stone more brilliant in luster than a diamond.

Titania has a hardness of seven and a half on Mohs scale making it very suitable for ring wear. It is harder than most birthstones such as amethyst and topaz and should last a lifetime under normal conditions of wear. Titania will not turn cloudy. It is a natural color stone and unlike zircon, which is a heat treated gem, titania will retain its brilliance and luster indefinitely. Titania usually is cut in the standard round brilliant cut, with 58 facets.—*Michigan Gem*

* * *

NEW MINERAL NAMED AFTER SANTA FE R.R.

A rare new mineral discovered near Grants, New Mexico, has been named Santafeite in recognition of the Santa Fe Railway's pioneer exploration and development of uranium deposits in this area.

Discoverer of the new mineral was Dr. Ming-Shan Sun, mineralogist for the New Mexico State Bureau of Mines and Mineral Resources.

Santafeite is a hydrated vanadate and was found in 1951 in an outcropping of todilto limestone near Haystack Mountain where uranium-bearing ores were discovered the previous year.—*Grants Beacon*

* * *

Directors of the California Federation of Mineralogical Societies approved a request by the San Mateo society to host the 1959 State Convention and Show. This year's show is scheduled for San Bernardino in June.—*Boulder Buster Press*

OBSIDIAN FLAKES MAY BE PREHISTORIC SAW TEETH

Scientists have found it difficult to account for the ability of pre-Columbian people to cut large quantities of wood without benefit of steel saws and axes. A saw made with pieces of glass embedded in rosin and clamped between two slats of wood was experimentally used for cutting wood at the University of Wisconsin. Large quantities of obsidian flakes are not uncommon around prehistoric sites and this suggests that they may have been teeth for saws.—J. G. Ennes in the San Francisco Gem and Mineral Society's *The Mineralog*

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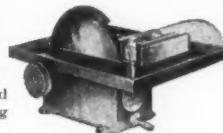


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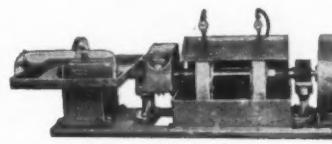
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By RANDALL HENDERSON

WE AMERICANS who live on the desert read the same newspaper headlines and hear the same radio reports as folks who dwell in the cities and elsewhere—and like Americans everywhere we are deeply concerned over the revolutionary changes which obviously are necessary to solve the critical problems confronting our nation in the months ahead.

Cyria and I do not have television. We prefer to spend the leisure hours in our garden and with our books. Perhaps we are a couple of eggheads. Anyway, we would be pleased and complimented if anyone should call us that.

Last night we listened to the CBS "Where We Stand" program, and this morning to President Eisenhower's annual message. It is reassuring to us that the men of the press and radio, and those in high places in our national government are keenly aware of the critical decisions to be made in the months ahead.

It is gratifying to us that Sputnik has given a jolt to the great American sin of smugness. Suddenly we have been made aware that there also are capable brains in other parts of the world—and that perhaps the Russians are working harder to develop their native endowment of intellect than are the great mass of Americans.

To meet this challenge, Uncle Sam is about to embark on a revitalized program of education — more science and more mathematics, designed to give Americans the know-how to keep pace with the scientists on the other side of the world.

But in our haste to train more scientists and more engineers we should not lose sight of the fact that there are more important goals for education than merely the launching of more and bigger satellites and missiles.

Pure science is an impersonal thing. It can serve the purposes of destruction as well as goals of benefit to mankind. With every gain in our scientific knowledge there becomes available an increased capacity for evil as well as for good. Pearl Harbor was a tragic illustration of the folly of giving the tools of advance science to leadership cursed with emotional immaturity.

No doubt, as a matter of self defense, we must develop weapons equal to the best that other nations can produce. If that is true, we should take steps to correct our deficiency by all means—but we must realize that this is merely a policy of expediency—that the making of weapons for mass extermination is not an end in itself. A civilization held together by fear of weapons of destruction is not the kind of a world you and I would want to bequeath to our children.

While our schools are teaching the chemistry and physics and mathematics necessary for mastery of the material elements on this earth, we should also be training leaders in the more important fields grouped under the general classification of humanities: history, language, anthropology, art, ethics, psychology and philosophy—those intangibles which in the long run determine what use men will make of the enormous power the physicists have placed in their hands.

Cyria and I are especially interested in the educational phase of the revolution that lies ahead. We feel that the industrial revolution of the last 100 years has served us well. It has brought us great wealth in creature comforts and conveniences—wealth commonly expressed in the term "higher standard of living." But too much prosperity may be no less devastating to intellectual and moral growth than too much poverty—and the low state at which we have arrived in our appraisal of intellectual values is revealed in the use of the derisive term "egghead" as a synonym for intellectual independence.

I think Walter Lippman well defined the crisis that is upon us when, in the current issue of *Look Magazine*, he wrote:

"We have to accept the hard fact that not only have we fallen behind, but that, as things are now, we shall continue to fall behind. The Russians will increase their lead until we have succeeded in pulling ourselves together, have nerved ourselves to extraordinary efforts, and have brought the highest intelligence and wisdom of which we are capable to bear upon this problem. The problem is not something that can be disposed of merely by new appropriations, new administrative decisions and new men in the Pentagon, necessary though all these things no doubt are.

"There will have to be great changes in our educational system, in our political habits, in our self-indulgent notion of what we feel must be spent privately as compared with what we can spend publicly—in our sense of values, in what we esteem and admire as success, in what we wish to honor and reward. For it is only by plainer living and higher thinking that a society that has become fat, complacent and torpid can be restored and revived."

Obviously it is a problem, the solution of which is going to affect every individual, low and high. To some who may have grown too smug to accept new disciplines gracefully, the way ahead will be hard and painful. But to those who accept the new disciplines as a challenge to the finest qualities with which humans are endowed, and who will respond eagerly and earnestly, the days ahead will be exhilarating—and highly rewarding.

BOOKS of the SOUTHWEST

BEAUTIFUL VOLUME ON WORK OF INDIAN ARTISTS

While the roots of their art go back untold centuries, art as we know it—painting on canvas to display in galleries and to sell to the public—is a relatively new means of cultural expression for Southwestern Indians.

It only began in the early 1930s. A Congressman asked: "Who wants to go West to buy a picture painted by an Indian of three apples and a plate?" and his words summarized the whole feeling of contempt against the government policy of not allowing Indian youngsters to paint in their traditional styles. The ban was lifted and the talent of Indian artists, guided by sympathetic and well-trained teachers bent on perpetuating native art forms, poured out from the Desert Southwest to the far corners of the world.

This artistry is almost instantly recognized wherever displayed. Here are paintings with a feeling for design. The dynamic Navajo-Apache drawings predominantly of animal subjects painted in unpredictable colors (horses, for instance, are as likely to be colored purple as they are brown); the more static Pueblo art, preoccupied with dance figures in bizarre costumes—all reflecting the Indians' deep attachment to the earth and his desire to reproduce beauty for beauty's sake.

Pueblo by pueblo, tribe by tribe, Clara Lee Tanner describes the Indian art movement to date through the work of individual artists, in a beautiful book, *Southwest Indian Painting*. This

work serves both as a source of reading pleasure and as a critical reference volume. Mrs. Tanner is a faculty member of the Department of Anthropology at the University of Arizona, and for nearly 30 years has been a devoted student of Southwestern Indian arts and crafts.

In lieu of the fact that only a few Indian artists make a full time living at their profession, Mrs. Tanner's work is remarkably thorough. She not only tells about these leading painters, she describes the work of lesser artistic lights, especially of up and coming students. And wisely, she makes no attempt even to guess where this neoteric movement will come to rest. Indian culture is changing rapidly and art—a mirror held up to that culture—is changing with it.

Published by Arizona Silhouettes and University of Arizona Press, Tucson; 42 pages of color illustrations (9x12 inch page size); index, bibliography and chapter notes; 157 pages; \$10.00.

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EASY TO UNDERSTAND BOOK ON Owyhee Desert Life

In the southwest corner of Idaho below the Snake River are 5,000,000 acres of desert mountains, mesas and low lands, the setting for Earl J. Larsson's *Owyhee: The Life of a Northern Desert*. The author, mammalogist and animal ecologist, is assistant professor of zoology at the University of Idaho.

The book is not a cold collection of data as the title and the author's background would suggest. The story of this interesting country is told in narrative form which permits Professor Larsson to give a general impression of the desert as well as scientific facts and observations. Action takes place on a summer expedition by three men, and here the author is able to inject into the story the variant viewpoints of an ecologist with years of field experience; an assistant who has just finished his education and has returned West where he was raised; and the narrator, an adventurer in conservation.

Purposely written to be easily understood by the layman, the author treats a wide range of Owyhee Desert subjects, from grazing problems to animal color adaptation. Nor are the human inhabitants of this arid land ignored for the reader is given many revealing side glances at the men and women

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who live here. Humans, too, figure in Nature's great scheme of balance and they also must adapt to the land and weather, and compete with other mammals for what sustenance the desert will provide.

Published by Caxton Printers, Caldwell, Idaho; illustrated by Don Fritts; index; 357 pages; \$5.00.

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